The University of Texas
Rio Grande Valley

Purpose of this handout

Congratulations on making it to Year 2 of medical school! You are that much closer to having your Doctor of Medicine degree. If you want to PRACTICE medicine, however, you have to be licensed, and in order to be licensed you must first pass all four United States Medical Licensing Exams. This book is intended as a starting point in your preparation for getting past the first hurdle, Step 1. It contains study tips, suggestions, resources, and advice. Please remember, however, that no single approach to studying is right for everyone.

USMLE – What is it for?

In order to become a licensed physician in the United States, individuals must pass a series of examinations conducted by the National Board of Medical Examiners (NBME). These examinations are the United States Medical Licensing Examinations, or USMLE. Currently there are four separate exams which must be passed in order to be eligible for medical licensure:

- **Step 1**, usually taken after the completion of the second year of medical school;
- **Step 2 Clinical Knowledge (CK)**, this is usually taken by December 31st of Year 4
- **Step 2 Clinical Skills (CS)**, this is usually be taken by December 31st of Year 4
- **Step 3**, typically taken during the first (intern) year of post graduate training.

Requirements other than passing all of the above mentioned steps for licensure in each state are set by each state's medical licensing board. For example, each state board determines the maximum number of times that a person may take each Step exam and still remain eligible for licensure**. In Texas, individuals are limited to <u>three attempts</u> at each Step exam.** Some states allow more attempts, some allow fewer. Our goal is for all of our students to be eligible for licensure in every state.

Step 1 assesses whether you understand and can apply important concepts of the sciences basic to the practice of medicine, with special emphasis on principles and mechanisms underlying health, disease, and modes of therapy. Step 1 ensures mastery of not only the sciences that provide a foundation for the safe and competent practice of medicine in the present, but also the scientific principles required for maintenance of competence through lifelong learning.

Step 2 Clinical Knowledge (CK) assesses whether you can apply medical knowledge, skills, and understanding of clinical science essential for the provision of patient care under supervision and includes emphasis on health promotion and disease prevention. Step 2 ensures that due attention is devoted to principles of clinical sciences and basic patient-centered skills that provide the foundation for the safe and competent practice of medicine.

Step 2 Clinical Skills (CS) A clinical skills examination was part of the original design of USMLE. The NBME was charged with including a test of clinical skills using standardized patients when such an examination was shown to be valid, reliable, and practical. NBME research and the work of other organizations administering clinical skills examinations demonstrate that clinical skills examinations

measure skill sets different from those measured by traditional multiple-choice questions. Mastery of clinical and communication skills, as well as cognitive skills, by individuals seeking medical licensure is important to the protection of the public.

The clinical skills examination began in June 2004 and is a separately administered component of Step 2. USMLE Step 2 CS is currently administered at five regional test centers (CSEC Centers) in the United States: Philadelphia, PA; Atlanta, GA; Chicago, IL; Houston, TX; and Los Angeles, CA.

Step 3 assesses whether you can apply medical knowledge and understanding of biomedical and clinical science essential for the unsupervised practice of medicine, with emphasis on patient management in ambulatory settings. Step 3 provides a final assessment of physicians assuming independent responsibility for delivering general medical care.

About this test and the policies of UTRGV...

It is a good idea to familiarize yourself with the medical student policies regarding Step 1 here at UTRGV please look at the Medical Student Policy handbook and see what the expectations are in regard to this exam.

UTRGV Policy Regarding USMLE

Step 1 Examination
Scheduling of Step 1: Students are required to take Step 1 of the USMLE prior to the start of the beginning of Year 3 orientation. Students who delay taking Step 1 until after the start of Year 3 orientation cannot begin the Year 3 clerkships until after the first clerkship or at the midpoint of Year 3.

Failure and Retaking of Step 1:
Students who fail USMLE Step 1 on their initial attempt will be removed from the Year 3 curriculum (at the end of their current clerkship) and be assigned to Independent Study, to prepare for and retake Step 1. Students must retake Step 1 between August 1st and August 31st. Students who pass on their second attempt can rejoin the Year 3 curriculum at its midpoint. Students who fail their second attempt will continue to be assigned to Independent Study. Students must complete their third attempt to pass Step 1 between March 1st and March 31st. Failure to pass, after the third attempt will result in automatic dismissal from the School of Medicine. After academic dismissal, a student may apply for readmission to the SOM through the standard admissions process. Policy Regarding USMLE Step 2 Clinical Knowledge and Clinical Skills Examinations Passage of Step 2 Clinical Knowledge (CK) and Step 2 Clinical Skills (CS) are required for graduation.

Initial attempts to pass both Step 2 exams (CK and CS) must be completed by October 31st of the year preceding graduation. To ensure that a student who matches to a residency will be able to start the PGY1 year on time, any student who will not be able to obtain a passing score on USMLE Step 2 CK and/or Step 2 CS before t
he final date for submission of the NRMP rank order list will be withdrawn from the residency match by the Office for Student Affairs. At the discretion of the Associate Dean for Student Affairs and the Senior Associate Dean for Education and Academic Affairs, such students will be allowed to walk with their class at commencement and will receive a diploma with a later date, if it is anticipated that they will
have met all graduation requirements within a reasonable time after commencement. Passing scores must be documented no later than April 15th of the year the student expects to graduate. Failure to document a passing score for either Step 2 exam by April 15th will result in a delay in graduation.

How important is your Step 1 score?

Residency positions are becoming more and more competitive. In the last few years, U.S. allopathic medical schools have increased their class sizes in an effort to improve Americans' access to healthcare. The number of residency positions during this same time period, however, has remained relatively constant thus making it more and more difficult for medical students to be successful in their residency matches.

Scary statistic – for the 2011 Match slightly more then 8,800 U.S. senior medical students were not successfully matched into a Year 1 position through either the regular NRMP Match or "Scramble" to secure a residency position for the 2011-2012 academic year.

What does this mean for you? It means that **Step 1 has become an even higher high stakes exam**. For better or worse, residency programs place a great deal of importance on Step 1 scores when assessing applicants. Grading systems in medical schools are not consistent and thus not comparable. Grade inflation is also widely accepted as a reality. Step 1 has therefore become the one objective measure common to all residency program applicants that program directors feel they can rely on to help them compare and assess applicants.

The more competitive the specialty (i.e., Plastic Surgery, Dermatology, Orthopedics), the more likely that programs will use Step 1 scores to screen residency applicants for interviews. A very good performance on Step 1 can definitely help when it comes to securing a top-rate residency, and a poor score can hurt by limiting your options. A failure on Step 1 can likewise all but eliminate the possibility of some residencies altogether. Bottom line - although Step 1 is only one of many criteria that will be used in evaluating your residency application, it is definitely in your best interest to do all you can to maximize your chances of doing well, regardless of what type of specialty training you may choose to pursue.

How is Step 1 scored?

Step 1 is a computer based test. When you take Step 1, the computer records your responses. After your test ends, your responses are transmitted to the NBME for scoring. The number of test items you answer correctly is converted to a three-digit score scale.

Currently, a score of 192 is needed to pass Step 1. Most Step 1 scores fall between 180 and 260. The mean score for first-time examinees from accredited medical school programs in the United States is in the range of 215 to 235 with a standard deviation of approximately 20. Your score report will include the mean and standard deviation for recent administrations of the Step exam.

Blocks of items on Step 1 are constructed to meet specific content specifications. As a result, the combination of blocks of items on any given Step 1 exam creates a form that is comparable in content to all other forms. The percentage of correctly answered items required to pass Step 1 varies slightly from form to form; however, examinees typically must answer 60 to 70% of items correctly to achieve a passing score.

What is the minimum passing score?
In December 2016, the USMLE's Step 1 Committee raised the minimum three-digit passing score **to 192**.

How do I apply for Step 1?

The initial application for Step 1 is done online.

- Go to www.nbme.org. Click on **"Licensing Exam Services",** then **"NBME Licensing Examination Services Website".**

- In the yellow **LOG IN** box, please note you do not have a USMLE ID number yet. Instead, click on **"First time user"** and follow the instructions.
- As part of the application, you will indicate a 90-day eligibility period during which you plan to take the exam. Payment is also required at this time ($535).
- Print out the application form which will require your signature and a picture. Bring the form to the Student Affairs Office for signature.
- You are ready to mail your application form in.

When should I apply?

The earlier your application is submitted, the sooner you can schedule your test date. People who wait until mid-spring will have difficulty getting their first choice of test dates. We recommend that you apply no later than early February.

How do I schedule my test?

When applying for Step 1, you must select a three-month period, such as June-July-August, during which you prefer to take Step 1. A Scheduling Permit with instructions for making an appointment at a Prometric Test Center will be issued to you after your registration application is processed and you are determined to be eligible to take the exam. The Scheduling Permit specifies the three-month eligibility period during which you must take Step 1. **During peak periods (May – July), allow up to approximately four weeks for processing of your application.** After obtaining your Scheduling Permit, you are able to contact Prometric immediately to schedule a test date.

Prometric schedules testing appointments for Steps 1 and 2 CK up to six months in advance. If your application is submitted more than six months in advance of your requested eligibility period, it will be processed, but your Scheduling Permit will be issued no more than six months before your assigned eligibility period begins.

Once your application has been processed, you will receive an email from NBME notifying you that your application is complete. About a week later, you will receive a second email from NBME notifying you that your Scheduling Permit is available; this message will include instructions for accessing the electronic scheduling permit using the registration entity's interactive website. You should verify the information on your Scheduling Permit before scheduling your appointment.

Your Scheduling Permit will include the following information:

your name,
the examination for which you registered,
your eligibility period,

your testing region,
your Scheduling Number,
your Candidate Identification Number (CIN).

Note: PRINT OUT YOUR SCHEDULING PERMIT AS SOON AS YOU RECEIVE IT and keep it in a safe place. You **MUST** bring it with you to the test center on the day of your test. **You will not be able to take the test if you do not bring your Scheduling Permit to the test center.**

Note: Your Scheduling Number is needed when you contact Prometric to schedule test dates. It differs from your **Candidate Identification Number (CIN)**, which is your private key, and is needed to test. Prometric does not have access to your CIN.

Scheduling Test Dates

Once you've gotten your permit, you may schedule your test online at **www.prometric.com** for any available test date that is within your approved 90-day eligibility period. Not all Prometric centers are open on weekends, and USMLE exams are not necessarily offered every day the centers are open. **Please note that May through July are one of the busiest periods for these testing centers because of the large USMLE demand during that time – PLAN AHEAD!**

Please keep the following in mind:

- You must have your Scheduling Permit before you contact Prometric to schedule a testing appointment.

- Appointments are assigned on a "first-come, first-served" basis; therefore, you should contact Prometric to schedule as soon as possible after you receive your Scheduling Permit.

- Your Scheduling Permit includes specific information for contacting Prometric to schedule your test date(s) at the test center of your choice. You will be able to change your test date after you have scheduled it IF your new test date is still within the 90-day eligibility period. If you must reschedule outside the approved eligibility period, you will need to reapply and pay an additional fee.

A FEE WILL BE ASSESSED IF YOU RESCHEDULE YOUR TEST DATE LESS THAN 30 DAYS BEFORE YOUR ORIGINALLY SCHEDULED DATE.

Where do I take the test?

Thomson Prometric, a part of The Thomson Corporation, provides scheduling and test centers for the computer-based components of USMLE. Step 1 and Step 2 CK are given around the world at Prometric Test Centers (PTCs).

Prometric test centers are located throughout the U.S. In Texas there are centers in:

- Abilene
- Amarillo
- Austin (2)
- Beaumont
- Bedford (2)
- Corpus Christi
- Dallas (2)
- El Paso
- Houston (3)
- Lubbock
- McAllen
- Midland
- San Antonio (2)
- Tyler
- Waco
- Wichita Falls

What is the format of the test?

The exam contains 7 one-hour blocks of questions and up to 1 hour of break time. There are 46 questions per block, for a total of 322 questions. This allows an average of 1 minute, 15 seconds per question. This is the same approximate amount of time you are allowed on your block and NBME exams.

- **Some blocks are harder than others.** Don't panic if your first block happens to be a more difficult one.

- **The questions are random**, so don't expect a block of pathology questions, a group of pharmacology questions, etc. **THIS IS NOT AN ADAPATIVE TEST – the content DOES NOT CHANGE based on your performance of questions you've already answered.**

- **Some questions will include pictures** – histology, gross pathology, CT images, etc.

- The exam includes some auditory and video questions.

- **Approximately 75% of the questions are SINGLE BEST ANSWER.** There will be anywhere from 3 to 5 answer choices.

- **Other questions consist of extended matching** – a list of items from which you must choose the one best answer that corresponds with the numbered items or questions located below the list.

- **The number of Step 1 questions NOT in a clinical vignette format has been greatly REDUCED** the majority of the questions on the exam are in clinical vignette format

Can I practice taking the test?

You should acquaint yourself with the USMLE test software well before your test date(s). Practice time is not available on the test day, and test center staff are not authorized to provide instruction on use of the software. A brief tutorial on the test day provides a review of the test software, including navigation tools and examination format, prior to beginning the test. It does not provide an opportunity to practice.

1. You can practice by downloading software from the NBME website

http://www.usmle.org/practice-materials/

The NBME software you install has over 100 practice test items and a software tutorial. Some practice items may include multimedia files, such as video or audio clips. This link also has more information about the test content and the question format.

2. You can schedule a practice test at a Prometric Test Center

If you registered for USMLE Step 1, Step 2 CK, or Step 3 and received your Scheduling Permit, you are eligible to register to take a Practice Session for that examination at a Prometric Test Center. You may take only one session per exam registration and must take it in the same testing region as your Step exam. Please note that Practice Sessions are not available on major local holidays and during the first two weeks of January, and are not administered using the new version of the NBME Test Delivery Software (FREDv2).

Before deciding to register for a Practice Session, please be aware of the following:

- **Practice Sessions are provided PRIMARILY to give examinees the opportunity to become familiar with the Prometric test center environment.**
- **Practice Sessions are administered using an older version of the NBME Test Delivery Software (FRED V1).**
- **NO NEW SAMPLE TEST MATERIALS ARE PRESENTED AT PRACTICE SESSIONS.**
- **There are no items with associated multimedia on the Practice Sessions.**
- **Performance on a USMLE Practice Session cannot be used to approximate performance on a USMLE Step examination.**

The Practice Session is a maximum of 3.5 hours and is divided into 3 1-hour blocks of 46-50 multiple choice test items each. When you complete the session, you will receive a printed percent correct score.

If you register for a Practice Session, a corresponding Scheduling Permit will be issued to you within seven business days. Upon receipt of your Practice Session Scheduling Permit, you may contact Prometric to schedule an appointment and pay the Practice Session fee via credit card ($52).

3. The NBME website offers 6 different online versions of the Comprehensive Basic Sciences Self-Assessment Exam (CBSSA) for Step 1. These are NOT the same tests as the Comprehensive Basic Sciences Exam (CBSE). Like the CBSE, however, the scores on these exams have a very high correlation with actual Step 1 scores. You are strongly encouraged to take one of these self-assessments before you begin your intense Step 1 preparation and another about one week prior to your scheduled Step 1 test date.

READ MORE ABOUT WEB-BASED SELF-ASSESSMENT EXAMS

www.nbme.org/

What's on the test?

The Comprehensive Basic Sciences Exam (CBSE) is the closest thing we have to the real exam that NBME will let anyone see. "Retired" items are on the USMLE website in the form of practice questions along with a tutorial of how the exam looks and works. You can find the practice items at www.usmle.org/. Since ALL of the items written by NBME are copyrighted, you should be aware of the potential consequences of accessing materials from individuals or companies who claim to have "actual" USMLE questions.

*****IMPROTANT NOTICE – PLEASE READ!*****

The USMLE website states:

"There are no test preparation courses affiliated with or sanctioned by the USMLE program. Information on such courses is not available from the ECFMG, FSMB, NBME, USMLE Secretariat, or medical licensing authorities.

Test preparation courses and materials are available from individuals and companies not associated with USMLE. It is unlawful for any test preparation service or program to use, disclose, distribute, or otherwise provide access to questions or answers from actual USMLE exams. If you are involved with any enterprise that disseminates USMLE content, you should be aware of the consequences to you, regardless of whether your exposure to USMLE content was advertent or inadvertent: **If there is evidence that you enrolled, participated in, or used any test preparation program or service that distributes, provides access to, or uses USMLE questions or answers, or provides a forum for others to share such information, your registration and/or testing may be canceled, your scores on the USMLE may be withheld or canceled, and you may be subject to further sanctions.**"

Step 1 Content described on the USMLE website:

"Step 1 consists of multiple-choice questions prepared by examination committees composed of faculty members, teachers, investigators, and clinicians with recognized prominence in their respective fields. Committee members are selected to provide broad representation from the academic, practice, and licensing communities across the United States and Canada. The test is designed to measure basic science knowledge. Some questions test the examinee's fund of information per se, but the majority of questions require the examinee to interpret graphic and tabular material, to identify gross and microscopic pathologic and normal specimens, and to solve problems through application of basic science principles.

Step 1 is constructed from an integrated content outline that organizes basic science content according to general principles and individual organ systems. Test questions are classified in one of these major areas depending on whether they focus on concepts and principles that are important across organ systems or within individual organ systems.

Sections focusing on individual organ systems are subdivided according to normal and abnormal processes, principles of therapy, and psychosocial, cultural, and environmental considerations. Each examination covers content related to the traditionally defined disciplines of anatomy, behavioral sciences, biochemistry, microbiology, pathology, pharmacology, and physiology, as well as to interdisciplinary areas including genetics, aging, immunology, nutrition, and molecular and cell biology. While not all topics listed in the content outline are included in every examination, overall content coverage is comparable in the various examination forms that will be taken by different examinees.

The Step 1 content outline describes the scope of the examination in detail but is not intended as a curriculum development or study guide. It provides a flexible structure for test construction that can readily accommodate new topics, emerging content domains, and shifts in emphasis. The categorizations and content coverage are subject to change. Broadly based learning that establishes a strong general understanding of concepts and principles in the basic sciences is the best preparation for the examination."

Step 1 includes test items in the following content areas:

- anatomy,
- behavioral sciences,
- biochemistry,
- microbiology,
- pathology,
- pharmacology,
- physiology,
- interdisciplinary topics, such as nutrition, genetics, and aging.

Step 1 is a broadly based, integrated examination. Test items commonly require you to perform one or more of the following tasks:

- interpret graphic and tabular material,
- identify gross and microscopic pathologic and normal specimens,
- apply basic science knowledge to clinical problems.

Step 1 classifies test items along two dimensions: system and process, as shown below under Step 1 Specifications:

The NBME offers the following specifications* of the content areas on the test:

System**	
25%-35%	General principles
65%-75%	Individual organ systems

- hematopoietic/lymphoreticular
- nervous/special senses
- skin/connective tissue
- musculoskeletal
- respiratory
- cardiovascular
- gastrointestinal
- renal/urinary
- reproductive
- endocrine
- immune

Process	
20%-30%	Normal structure and function
40%-50%	Abnormal processes
15%-25%	Principles of therapeutics
10%-20%	Psychosocial, cultural, occupational, and environmental considerations

* Percentages are subject to change at any time. See the USMLE website for the most up-to-date information.

** The general principles category includes test items concerning those normal and abnormal processes that are not limited to specific organ systems. Categories for individual organ systems include test items concerning those normal and abnormal processes that are system specific.

NBME also publishes a more detailed outline of the topics covered on the Step 1 exam. Use this as an outline to make sure you are covering all of these topics in your study plan.

http://www.usmle.org/pdfs/step-1/2017content_step1.pdf

How do I prepare for Step 1?

Several things have been proven to help students prepare to do their best of Step 1:

1. LEARN the material you are currently studying in your classes.
Approximately 70% of the questions on the exam are likely to use or combine information in ways that you have not seen before. It is the purpose of the testing agency to see how adept you are at taking partial information and, based on that, figuring out an answer you consider to be a high probability response. You can't do that with MEMORIZED material, but you can do it using material that you have LEARNED.

2. KNOW how to approach multiple choice questions and PRACTICE, PRACTICE, PRACTICE. Some people seem to instinctively know how to answer multiple choice questions correctly, others of us not so much. There are test-taking skills that you can learn to help you answer these kinds of exam questions.

If you always feel that your performance on multiple choice tests doesn't equate with your mastery of the material, you might think about having your test taking analyzed.

Jolley Test Prep (formerly Blanc Education Services) offers online diagnostic testing of your ability to take multiple choice tests and measures variables such: as the amount of time spent on different types of questions; correlations between the length of a question and the likelihood of answering it successfully; performance on questions which rely on strict definitions or precise interpretation of technical vocabulary; and the extent to which you are able to narrow down your choices to two good answers; and the extent to which your second choices are correct.
They also offer a **full-length Mock Board Exam.** For details and how to order a test, please go to www.jolleytestprep.com

3. ALLOW enough time to prepare, but not too much. Although you will have approximately 8 weeks from the time Year 2 ends to the deadline for taking Step 1, the vast majority of our students throughout the years reported that they spent between four to six weeks of intense study following the end of Year 2 preparing for Step 1. Please note, however, there is no hard and fast rule regarding amount of study time and everyone works at a different pace. Many students who have taken longer than 6 weeks to prepare later said they felt they took too much time, and actually lost ground with their studying (they "peaked" before actually taking Step 1). ***Just remember everyone works at a different pace and your preparation should be individualized to your study style and needs.***

4. MAKE a study schedule and stick to it. This is a **critical** step in successful Step 1 preparation.

5. STUDY smart. Spending 10 hours a day passively reading study guides or old notes is much less effective than spending half that amount of time in active study. Explain concepts out loud to a study partner, practice answering questions by explaining why the right answers are right and

the wrong answers are wrong. If concept mapping works for you, do it. If there are other methods that work for you, use them.

ACTIVE VS. PASSIVE STUDYING

Repetitively reading over your notes is not an efficient or effective way of studying. You cannot passively read over material and expect to remember it. This form of **passive studying** can really fool you into thinking that you KNOW the material, when really all you are doing is RECOGNIZING it as you read it. In order to really learn information, you need to engage in **active studying.**

One good resource for improving study skills can be found at:

meded.ucsd.edu/ugme/oess/study_skills/how_to_study_actively/

Mistakes most commonly made when preparing for Step 1:

1. passive studying
2. insufficient practice with questions
3. memorizing, not understanding the material
4. inappropriate test day strategies
5. misreading or misinterpreting questions

Additional random advice from other medical school's websites…

A Plan for Success on the USMLE Step 1, 2 and 3 Examinations

5 Steps for Success

1. Practice for the event.

- Do some questions every day. Minimally, find at least 15 to 30 minutes daily.
- Use the questions you miss to give yourself focused directions for review.
- Make certain that the questions you use have explanations, or at least references to a reliable source so that you can confirm any misperceptions you may have.
- Start using a laminated sheet and Expo 2 pen for interacting with the questions.

2. Evaluate yourself with a diagnostic test.

- Find out qualitatively and quantitatively where you need to spend more time.
- Remember - you are looking to clearly identify your relative strengths and weaknesses and to focus on your strengths. It is very difficult to improve greatly by trying to clarify weaknesses but strengthening your strengths will ensure that you do not let yourself give away what you have coming conceptually.
- By definition you are going to miss 4 out of every 10 questions on the USMLE (around 62% is the mean). Get used to making decisions about which questions to let go of

and which questions to spend time on thoughtfully. The "trick" is to not miss 5 out of 10.

3. Start pacing exercises when you have 2 - 3 months to go before your test date.

- Do a 20 to 30 minute, timed practice set every day. You are working to predictably answer 25 questions in each 30 minute period. This is a pace of 70 seconds per question which is what the boards allow.
- Spend an additional 10 to 15 minutes looking up the answers to the questions you miss.

4. One month before your exam, go through another self-assessment.

- Give yourself another diagnostic test. To what extent have you corrected previous error patterns. What in your study plan is working? What is not?
- Adjust your schedule to ensure you are focused on questions in multiple areas.

5. Two weeks before the exam, sit for a full day mock board on a computer.

- Plan for and follow through on a testing schedule. What food got you through the day? When do you need to take breaks? What did you have for breakfast? Did you use earplugs? Did you remember to write on the laminated sheets?
- If you had difficulties, what are you going to do?

TEST TAKING STRATEGIES: A PSYCHOLOGIST'S PERSPECTIVES

Emil Rodolfa, Ph.D. - UC Davis Counseling Center

- Excessive tension and anxiety will interfere with performance when studying and during the test. Reduce anxiety and stay alert and focused.

- Concentrate on what you know rather than spending time catastrophizing about the unpleasant consequences of possibly failing the exam.

- Do not fight the exam! The exam is the same for everyone and no one is out to get you. Energy wasted on blaming the test/test maker is energy spent in the wrong direction.

- Do a brief relaxation exercise: For instance, inhale on three counts, hold for two counts and exhale for three counts. Slow steady breaths will help you stay calm.

- Practice a muscle relaxation exercise. See attached exercise.

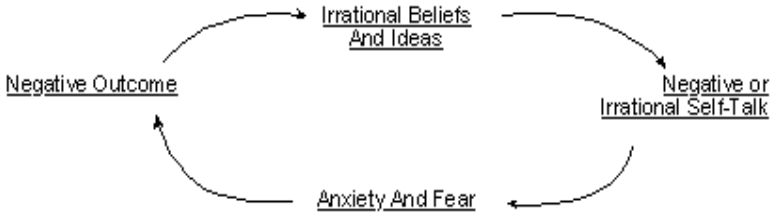
- Visualize yourself completing the test successfully. If you can't see yourself accomplishing the task, the task becomes much more difficult.

- Regard lapses of memory as normal, key the question and return to it later.

- Focus on only one question at a time. Anxiety might cause you to jump from question to question.

- Don't rush and don't spend too much time on any one question.

- Be aware of the worry cycle and intervene if it is activated:



So where do I start?

1. **Self-assessment.** Experts agree that the first thing you need to do is take some sort of diagnostic test to see where your areas of strength and weakness are. Diagnostic tests are available from Kaplan, NBME, Uworld, and a variety of other online sources that are listed later under "Other Resources."

2. **Make a study schedule.** There are many sample schedule templates that can be found that you can use as a guide for preparing your own. ***When you prepare your own study schedule, you must first look at your own diagnostic test results and prepare your schedule with more time allotted to weaker subjects, and less time to stronger subjects. Individual study pace also needs to be factored in, as some accomplish more per study day than others.***

Kaplan's Tips for test day…

1. Arrive at the Prometric Test Center 30 minutes early so you are not rushed and have time to get organized. You will be given a locker to store your personal items and then assigned a computer station. Remember that you have a total of seven hours to complete 322 questions, and a total of one hour to be used throughout the day for breaks and lunch.

2. To cope with fatigue, you will need to schedule breaks. Our recommended schedule for the exam is:

Question Block	**Break time at end of Block**
Block 1	No break
Block 2	5 minute break
Block 3	5 minute break
Block 4	30 minute lunch break

Block 5	No break
Block 6	10 minute break
Block 7	Done!

This allows you 10 minutes extra to use as needed. Remember that you will need to sign in and out when you take breaks. You should also be aware that if you leave the exam room *during* a block, it will be marked as an irregularity in your testing session. Therefore, you need to consider after each block whether you want to take a bathroom break.

3. Start with the beginning of the question block and work your way to the end. The idea here is to get into a rhythm that will help create what one psychologist calls a "Flow" experience. The flow experience is a state of optimal concentration and maximal performance.

4. Do not skip any questions. If you don't know it when you come to it, you are not likely to know it later. Skipping around wastes time and can end up confusing you. Deal with each question as you come to it, answer it as best you can, and move on to the next question.

5. Limit your use of the marking feature to no more than two or three questions per block. Of course you should answer each question as you come to it, but you may want to double-check yourself on a few questions. The marking feature lets you return to review and reconsider questions if you have time left over. Used correctly, marking will help you revisit questions where you have a high probability of getting the answer correct. Misused, marking causes you to not give a question your full attention the first time around. You simply may not have time to go back and look at questions you have marked, especially if you mark a lot of them.

6. Be cautious about changing answers. In general, your odds of changing a correct answer to a wrong one are so much higher than the reverse that it is simply not worth the risk. If you change an answer, you are most likely making it wrong! Your first impulse is usually the correct one. Stay with it unless some clear insight occurs to you.

7. If you finish a question block with time left over, go back and "check" only those answers that you have previously marked. Checking almost always leads to changing and tends to reduce your score. If you have a spare moment, make sure that you have entered an answer for every question in the block and then, relax. Sit, take a break, and mentally prepare yourself for the next block of questions. Focus on the questions to come, not the ones that are past.

8. Monitor your time. Know how much you have left, so you do not find yourself rushed at the end. Work on your pacing from the beginning of the question block. Check your watch every 10 questions to make sure you are on the correct pace to finish. If you pace yourself throughout the block, you should not be squeezed for time at the end.

9. Relax. During the breaks between question blocks, try to relax and not think back over the exam. The desire to recall questions is strong, but not helpful. Those questions are in the past; you will never see them again. Focus on relaxing and making the most of your break. Remember, you will always tend to remember those questions you get wrong.

AND FINALLY SOME PREP ADVICE FROM UTRGV SOM Facutly…

> "I'd recommend studying no more than about 5 weeks. Any more and you will start forgetting things you learned earlier. I caution you to take what your classmates say about their exam with a grain of salt, because every exam is different. Also, "buzzwords" are not typically used on Step 1. Rather than use the words "smudge cells", for example, they'll probably just show you a blood smear."
>
> "Have a planned study schedule that you stick to. If you fall behind, you'll have a hard time getting through everything and still being able to review material."
>
> "Do not use First Aid or the all-inclusive books as the **sole** study aid. If possible, use the High Yield books."
>
> "Start early, stick to a schedule, and try not to become overwhelmed with all available resources. Pick a couple for each subject because in my experience you cannot absorb it all. Use First Aid as a scaffold – it really is helpful for recall association."
>
> "The last week/few days before Step are very distracting – don't give yourself too much time to study, 4-6 weeks worked for me. But be prepared mentally for the anxiety the week before the test – focus on easier subjects to review."

What about review courses?

Some students find the structure and discipline of a review course very helpful as part of their Step 1 preparation. Unfortunately some programs schedule their courses at times of the year that don't coincide with most first-time takers' preparation efforts. Nevertheless, here is some information on review courses that are available.

NOTE – Providing the following information does not represent an endorsement from UTRGV SOM or the Office of Student Affairs!

DOCTORS IN TRAINING
http://www.doctorsintraining.com

Online and live review courses available. A live course will be offered in Fort Worth in May Course price is $825. See the website for more detailed information on both the live and the online courses.

Becker USMLE Review
https://www.becker.com/usmle/courses/step-1-exam-review/Online and live review courses available. Live sessions are held in Dallas at a hotel.

the price of the live course includes the hotel room and costs more for a single occupancy room. Prices for the live review course range from: $4,000 - $6,499 for single occupancy.

2017 Dates for Becker's Dallas Location (please check on the website for course dates)

- April – June
- May – June

Becker also offers an online course ("Online") as well as an online course delivered to your mobile device ("2go"). See the Falcon Review website for pricing details.

KAPLAN

www.kaplanmedical.com

Kaplan offers live, "Classroom Anywhere" (live online), and strictly web-based review courses. Currently there are no live courses available whose dates would work with your semester scheduling. Visit Kaplan's website for details of the other course offerings. Cost for the month live, on site or online course on average is about $4,000.

Uworld preparation for Step One

www.uworld.com

This is one of the most popular questions banks among medical students

Greatest effect of Step 1 score: Determined by AAMC independent study
Most widely used Qbank: Used by over 90% of all medical students
Questions are concept-based learning resources, not facts or assessments of knowledge
One-stop comprehensive resource
Questions and explanations are written by only the top medical experts with clinical experience

STEP 1 (Qbank + Self-assessment)
Qbank 30-days + Form 1 & 2 (2-weeks each) $199
Qbank 60-days + Form 1 & 2 (2-weeks each) $249
Qbank 90-days + Form 1 & 2 (2-weeks each) $299
Qbank 180-days + Form 1 & 2 (2-weeks each) $349

Biostatistics Subject Review
90-days $25

STEP 1 (Qbank Only)
Qbank 30-days $169
Qbank 60-days $219
Qbank 90-days $249
Qbank 180-days $299
Qbank 360-days $399
Qbank 360-days + Form 1 & 2 (2-weeks each) $449
Qbank (2-years) + Form 1 & 2 (2-weeks each) $649
Qbank 730-days (2-years) $599

STEP 1 Self-assessment
Form 1 (2-weeks) $35
Form 2 (2-weeks) $35
Form 1 & 2 (2-weeks each) $60

https://www.uworld.com/purchase.aspx?cid=1

Physician Assisted Student Success Program (PASS Program)

http://www.passprogram.net/program-format.asp

4-week Program

- Classroom lectures during the four weeks
- 2 guaranteed one-on-one sessions per week (additional one-on-one sessions may be purchased if needed)
- USMLE practice questions and simulated exams
- Unlimited use of the computer lab (during Center hours)
- 2 NBME practice exams: first day of class and end of 3rd week
- Tuition: **$4,100**

8-week Program

- 1st 4 weeks – same as standard 4 week program, except there are 4 tutoring sessions/week
- In 2nd 4 weeks there are 5 tutoring sessions/week
- Diagnostic Test during week 1, 4 and 7
- 60 day paid subscription to USMLEWORLD, Kaplan Qbank, or COMBANK account
- 3 NBME practice exams: first day of class, end of 4th week, end of 7th or during last week of program
- Instructor monitors students' progress weekly and intervenes, if necessary
- If you do not pass the USMLE exam, you may return for 4 weeks for FREE!! (returning students are responsible for housing/living expenses)
- Unlimited use of computer lab (during Center hours)
- Tuition:$**7,800**

See PASS Program website for 2017 4-week and 8-week session calendars.

Other Study Resources…
Please check out the MANY great resources available to you at no charge through the **UTRGV School of Medicine.** In addition to numerous online texts, you also have FREE access to Kaplan for your Step 1 (and Step 2 CK) preparation. You can create practice exams and you can select the topics.

There are certainly many more websites and books available than those listed here. If you find a book or website that you find helpful, please forward it to Karen Turner so we can include it in our list of resources. Remember that you can easily get overwhelmed by using too many resources as you study, so pick out the few that seem to work best with your style of studying and learning and go with it. What works for one person may not work for another, so be careful about using a

book just because someone else said it worked for them. Try it for yourself – if it doesn't fit you, move on to something that does. A number of books are available for check-out in the Student Affairs Office library.

Just a few of the online question banks:

www.usmleasy.com

www.usmlerx.com

http://www.uworld.com

www.score95.com

And a few more books:

- NMS Review for Step 1
- High-Yield Pathology
- Step Up: A High-Yield, Systems-Based Review for USMLE Step 1
- USMLE Step 1 Recall: Buzzwords for the Boards
- High-Yield Comprehensive USMLE Step 1 Review
- Kaplan QBook
- First Aid Cases for USMLE Step 1
- USMLE Step 1 Secrets
- First Aid Q&A for USMLE Step 1
- Goljan's Rapid Review of Pathology
- Robbins Review of Pathology
- Princeton Review USMLE Review
- Blueprints – Step 1 Q&A
- Appleton & Lange USMLE Step 1
- Platinum Vignettes (Elsevier)
- Rapid Review Series - USMLE Step 1

Lastly, visit the following publishers' websites for more resources:

- http://www.lww.com/medstudent/
- http://www.elsevier.com/

STUDY SCHEDULES

One of the biggest pieces of advice that students and experts alike give surrounds the idea of developing and sticking to a study schedule. Everybody has their own idea of what works for them and what doesn't, or what topics need to be studied more. Bottom line - you need to have a starting point. **Remember you must create your own study schedule based on YOUR individual needs.**

Also, check out the following – one is a set of 3 different things to study for Step 1 on a daily basis: a Drug-A-Day, a Bug-A-Day, and a Disease-A-Day. The other is a list of high-yield topics for Step 1.

What's the BOTTOM LINE???

1) **Start studying NOW**. Any studying you do for Step 1 will help you with your current classes and vice-versa.

2) **Do a self-assessment** to determine your strengths and weaknesses.

3) **Develop a reasonable study schedule**. Nobody can effectively study 15 hours a day, 7 days a week for weeks on end. You can use other people's schedules as a template, but you must tailor your schedule to your own needs.

4) **Be aware of all the resources available**, but don't get overwhelmed trying to use all of them. Pick the ones that work for you and stick with them.

5) **PRACTICE, PRACTICE, PRACTICE**. There are tons of questions out there – use them and LEARN from them.

6) **Take this very seriously but DON'T PANIC!!** You can't think straight in that state of mind.

BUG-A-DAY

DATE	BUG	DATE	BUG
15-Feb	Staph. epidermidis	12-Apr	Rickettsii rickettsii
16-Feb	S. saprophyticus	13-Apr	R. prowazekii
17-Feb	S. aureus	14-Apr	R. typhi
18-Feb	Strep. pyogenes	15-Apr	Coxiella burnetii
19-Feb	S. agalactiae	16-Apr	Bartonella henselae
22-Feb	S. pneumoniae	19-Apr	Mycoplasma pneumoniae
23-Feb	S. viridans grp.	20-Apr	Actinomyces israelii
24-Feb	S. bovis	21-Apr	Nocardia asteroides
25-Feb	Enterococcus grp.	22-Apr	Mycobacteria tuberculosis
26-Feb	Neisseria meningiditis	23-Apr	B. recurrentis
1-Mar	N. gonorrhoeae	26-Apr	Leptospira interrogans
2-Mar	Bacillus anthracis	27-Apr	Treponema pallidum
3-Mar	B. cereus	28-Apr	C. psittaci
4-Mar	Clostridium botulinum	29-Apr	C. trachomatis
5-Mar	C. tetani	30-Apr	M. leprae
8-Mar	C. perfringens	3-May	M. avium-intracellularis complex
9-Mar	C. difficile	4-May	hepatitis B & delta virus
10-Mar	Corynebacterium diphtheriae	5-May	BK & JC virus
11-Mar	Listeria monocytogenes	6-May	Smallpox
12-Mar	Escherichia coli	7-May	Herpes simplex I & II
15-Mar	Shigella Sp.	10-May	Varicella-zoster
16-Mar	Salmonella Sp.	11-May	Epstein-Barr
17-Mar	Serratia marcescens	12-May	Cytomegalovirus
18-Mar	Klebsiella pneumonia	13-May	Human papilloma virus
19-Mar	Haemophilus influenza	14-May	Adenovirus
22-Mar	H. ducreyi	17-May	Parvo, B19 virus
23-Mar	H. aegyptius	18-May	Influenza A
24-Mar	Campylobacter jejuni	19-May	Measles
25-Mar	Vibrio cholera	20-May	Mumps
26-Mar	V. parahemolyticus	21-May	Rubella virus
29-Mar	Helicobacter pylori	24-May	Parainfluenza
30-Mar	Bacteroides fragilis	25-May	RSV
31-Mar	Proteus vulgaris	26-May	Hepatitis A
1-Apr	Pseudomonas aeruginosa	27-May	HIV (HTLV III)
2-Apr	Legionella pneumophila	28-May	Rabies virus
5-Apr	Bordetella pertussis	31-May	Poliovirus
6-Apr	Brucella abortus	1-Jun	Coxsackie A & B
7-Apr	Francisella tularensis	2-Jun	Dengue virus
8-Apr	Yersinia pestis	3-Jun	Rhinovirus
9-Apr	Borrelia burgdorferi	4-Jun	Hepatitis C

DRUG-A-DAY

DATE	DRUG 1	DRUG 2	DATE	DRUG 1	DRUG 2
15-Feb	Cyclophosphamide		12-Apr	Ampicillin	
16-Feb	Tetracycline	Chloramphenicol	13-Apr	Ziduvodine	Dideoxyinosine
17-Feb	Ciprofloxacin		14-Apr	Acyclovir	
18-Feb	Paclitaxel	Vinblastine	15-Apr	Chloroquine	
19-Feb	Insulin		16-Apr	Amphoteracin B	Metronidazole
22-Feb	Methotrexate		19-Apr	Primaquine	Griseofulvin
23-Feb	Glyburide		20-Apr	Trimethoprim	Sulfamethoxazole
24-Feb	Aspirin		21-Apr	Rifampin	Isoniazid
25-Feb	Lovastatin		22-Apr	Clindamycin	Gentamicin
26-Feb	Heparin	Warfarin	23-Apr	Cyclosporine	Cefaclor
1-Mar	Streptokinase		26-Apr	Phenytoin	Carbamazepine
2-Mar	Allopurinol	Probenecid	27-Apr	Lithium	Fluoxetine
3-Mar	Clomiphene		28-Apr	Amphetamine	Cocaine
4-Mar	Oxytocin		29-Apr	Imipramine	Amitriptyline
5-Mar	Acetaminophen	Acetylcystine	30-Apr	Haloperidol	Clozapine
8-Mar	Atropine		3-May	Ketamine	Thiopental
9-Mar	Scopolamine		4-May	Tamoxifen	
10-Mar	Epinephrine		5-May	Diltiazem	Verapamil
11-Mar	Amiloride		6-May	Imipenem	Vancomycin
12-Mar	Hydrochlorthiazide		7-May	Quinidine	Procainamide
15-Mar	Furosemide	Mannitol	10-May	Indomethacin	
16-Mar	Spironolactone		11-May	Methadone	
17-Mar	Neostigmine		12-May	Morphine	Naloxone
18-Mar	Organophosphates		13-May	Amiodarone	Digoxin
19-Mar	Hydralazine	Propranolol	14-May	Halothane	
22-Mar	Nitroglycerine	Nitroprusside	17-May	Dimercaprol	Deferoxamine
23-Mar	□-Methyl Dopa		18-May	Bethanechol	Carbidopa
24-Mar	Cimetidine		19-May	Amlodipine	Nifedipine
25-Mar	Misoprostal		20-May	Metolazone	
26-Mar	Sucralfate		21-May	Enalapril	Captopril
29-Mar	Terbutaline		24-May	Metoprolol	Prazosin
30-Mar	Bleomycin		25-May	Rosiglitizone	
31-Mar	Ephedrine	Ipratropium	26-May	Phencyclidine	Diazepam
1-Apr	d-Tubocurarine		27-May	Amoxicillin	Clavulanic Acid
2-Apr	Propylthiouracil	Dexamethasone	28-May	5-Fluorouracil	Cisplatin
5-Apr	Metyrapone	Aminoglutethimide	31-May	Finasteride	
6-Apr	Methysergide		1-Jun	Abciximab	
7-Apr	Prednisone		2-Jun	Ethambutol	
8-Apr	Na-Dantrolene		3-Jun	Losartan	
9-Apr	Dopamine	Dobutamine	4-Jun	Cholestyramine	

Disease-A-Day

DATE	PREVIEW	REVIEW	DATE	PREVIEW	REVIEW
	BIOCHEMISTRY				
19-Jan	Sickle Cell Disease			***MICROBIOLOGY & IMMUNOLOGY***	
20-Jan	Diphtheria	beta-Thallasemia	17-Mar	Chlamydial Inf's	Hemolytic-Uremic Synd
21-Jan	Von Gierke's Dz.	Cystic Fibrosis	18-Mar	Mononucleosis	Rocky Mtn. Spotted Fev
22-Jan	Kartagener's Synd.	Pompe's Dz.	19-Mar	Giardiasis	Hepatitis C
23-Jan	Osteogenesis Imperfecta	Rhabdomyosarcoma	20-Mar	Necrotizing fasciitis	Toxoplasmosis
24-Jan	Methemoglobinemia	Insulinoma	21-Mar		
27-Jan	McArdles Syndrome	Lead Poisoning	24-Mar	Congenital Syphilis	Chron Granulomatous Ds
28-Jan	Lesch-Nyan Synd.	Galactosemia	25-Mar	IgA Deficiency	Toxic Shock Synd
29-Jan	Familial Hypercholest.	alpha-Thallasemia	26-Mar	Bruton's Agammaglob.	SCID Syndrome
30-Jan	Hemophilia A	Tay Sachs	27-Mar	Anaphylactic Shock	DiGeorge Synd.
31-Jan	Cobra Venom	Von Willebrand's Dz.	28-Mar	Defense Mechanisms	Graft vs Host Ds.
				BEHAVIORAL SCIENCE	
3-Feb	Pernicious Anemia	2,4-Dinitrophenol tox.	31-Mar	Anorexia Nervosa	More Defense Mech.
4-Feb	Duchenne's Musc Dyst	Scurvy	1-Apr	Major Depression	Separation Anxiety
5-Feb	Hypothyroidism	Adult Polycystic Kidney	2-Apr	Amnesia	Pathologic Grief Do.
6-Feb	Diabetes Mellitus	Phenylketonuria	3-Apr	Obsess/Compul Do.	Somatoform Do.'s
7-Feb	Pemphigus Vulgaris	Starvation	4-Apr	Chediak-Higashi	Post Traum. Stress Do.
	ANATOMY & PHYSIOLOGY			***PATHOLOGY***	
10-Feb	Membranous GN	Psoriasis	7-Apr	Contact Dermatitis	Bacterial Meningitis
11-Feb	Goodpastures Synd.	Multiple Sclerosis	8-Apr	Leiomyoma	Abd Aortic Aneurysm
12-Feb	Papillary Necrosis	Minimal Change Ds.	9-Apr	Turner's Synd.	Cervical Carcinoma
13-Feb	Uremia (Ren. Failure)	Acute Post Strep GN.	10-Apr	Peptic Ulcer Ds.	Polyarteritis Nodosa
14-Feb	Ectopic Pregnancy	Acute Tubular Necrosis	11-Apr	Malignant Melanoma	Familial Polyposis
17-Feb	WPW Syndrome	Nephrolithiasis	14-Apr	G-6-PD Deficiency	Pneumonia
18-Feb	ACL rupture	Complete Heart Block	15-Apr	Alzheimer's Ds.	Acute Lymph Leukemia
19-Feb	Myotonic Dystrophy	Inguinal Hernia	16-Apr	Endometriosis	Epidural Hematoma
20-Feb	Congest. Heart Failure	Myasthenia Gravis	17-Apr	Parathion Toxicity	Breast Cancer
21-Feb	Abruptio Placentae	Aortic Stenosis	18-Apr	Good Friday	
				PHARMACOLOGY	
24-Feb	Hydrocephalus	Renal Artery Stenosis	21-Apr	Essential Hypertension	Glaucoma
25-Feb	Mesenteric Infarction	Deep Vein Thrombosis	22-Apr	Schizophrenia	Pheochromocytoma
26-Feb	Acute Pancreatitis	Crohn's Ds.	23-Apr	Hypercholesterolemia	Gen. Anxiety D.O.
27-Feb	Celiac's Ds.	Alcoholic Hepatitis	24-Apr	Angina Pectoris	Steven's Johnson Synd
28-Feb	Tuberculosis	Zollinger-Ellison Synd.	25-Apr	Coccidioidomycosis	Epilepsy
3-Mar	Spina Bifida	Asthma	28-Apr	Atrial Fibrillation	Trichinosis
4-Mar	Carpal Tunnel Synd.	Trigeminal Neuralgia	29-Apr	AID's	Salicylate tox.
5-Mar	Wallenberg's Synd	Bell's Palsy	30-Apr	Appendicitis	Analgesic Abuse
6-Mar	Graves Ds.	Guillain-Barre Synd	1-May	Hodgkin's Lymphoma	Multiple Myeloma
7-Mar	Menopause	Addison's Ds.	2-May	*no preview today*	*no review today*
10-Mar	ARDS	Prolactinoma			
11-Mar	Silicosis	Bronchogenic CA			
12-Mar	Emphysema	Wegener's Granulomat.			
13-Mar	Influenza A "the flu"	Chronic Bronchitis			
14-Mar	Gastroenteritis	Hemochromatosis			

USMLE STEP 1 and USMLE STEP 2
Highly tested topics
The Complete Gold Collection

USMLE E-BOOK

This is *the* GOLD collection of highly tested USMLE Step 1 and USMLE Step 2 topics listed in tables for easy review. These 'PEARLS' will appear on your boards exams!

Diseases

Addison's Disease	1. Primary adrenocortical deficiency
Addisonian Anemia	2. Pernicious anemia (antibodies to intrinsic factor or parietal cells → ↓IF → ↓Vit B_{12} → megaloblastic anemia)
Albright's Syndrome	3. Polyostotic fibrous dysplasia, precocious puberty, café au lait spots, short stature, young girls
Alport's Syndrome	4. Hereditary nephritis with nerve deafness
Alzheimer's	5. Progressive dementia
Argyll-Robertson Pupil	6. Loss of light reflex constriction (contralateral or bilateral) 7. "Prostitute's Eye" – accommodates but does not react 8. Pathognomonic for 3°Syphilis 9. Lesion pretectal region of superior colliculus
Arnold-Chiari Malformation	10. Cerebellar tonsil herniation through foramen magnum = see thoracolumbar meningomyelocele
Barrett's	11. Columnar metaplasia of lower esophagus (↑ risk of adenocarcinoma)– constant gastroesophageal reflux
Bartter's Syndrome	12. Hyperreninemia
Becker's Muscular Dystrophy	13. Similar to Duchenne, but less severe (mutation, not a deficiency, in dystrophin protein)
Bell's Palsy	14. CNVII palsy (entire face; recall that UMN lesion only affects lower face)
Berger's Disease	15. IgA nephropathy causing hematuria in kids, usually following infection
Bernard-Soulier Disease	16. Defect in platelet *adhesion* (abnormally large platelets & lack of platelet-surface glycoprotein)
Berry Aneurysm	17. Circle of Willis (subarachnoid bleed) Anterior Communicating artery 18. Often associated with ADPKD
Bowen's Disease	19. Carcinoma in situ on **shaft** of penis (↑ risk of visceral ca) [compare w/ Queyrat]
Brill-Zinsser Disease	20. Recurrences of rickettsia prowazaki up to 50 yrs later
Briquet's Syndrome	21. Somatization disorder 22. Psychological: multiple physical complaints without physical pathology
Broca's Aphasia	23. Motor Aphasia (area 44 & 45) intact comprehension
Brown-Sequard	24. Hemisection of cord (contralateral loss of pain & temp / ipsilateral loss of fine touch, UMN / ipsi loss of consc. Proprio)
Bruton's Disease	25. X-linked agammaglobinemia (↓ B cells)
Budd-Chiari	26. Post-hepatic venous thrombosis = ab pain; hepatomegaly; ascites; portal HTN; liver failure
Buerger's Disease	27. Acute inflammation of medium and small arteries of extremities → painful ischemia → gangrene 28. Seen almost exclusively in young and middle-aged men who smoke.
Burkitt's Lymphoma	29. **Small noncleaved cell lymphoma** EBV 30. 8:14 translocation 31. Seen commonly in jaws, abdomen, retroperitoneal soft tissues 32. Starry sky appearance
Caisson Disease	33. Nitric gas emboli
Chagas' Disease	34. Trypansoma infection - cardiomegaly with apical atrophy, achlasia
Chediak-Higashi Disease	35. (AR) Phagocyte Deficiency = defect in microtubule polymerization 36. Neutropenia, albinism, cranial & peripheral neuropathy & repeated infections w/ strep & staph
Conn's Syndrome	37. Primary **Aldosteron**ism: HTN; retain Na^+ & H_2O; hypokalemia (causing alkalosis); ↓ renin
Cori's Disease	38. Type III Glycogenosis – Glycogen storage disease (debranching enz: amylo 1,6 glucosidase def. ↑ Glycogen)
Creutzfeldt-Jakob	39. Prion infection → cerebellar & cerebral degeneration
Crigler-Najjar Syndrome	40. Congenital hyperbilirubinemia (unconjugated) 41. Glucuronyl transferase deficiency. Can progress to Kernicterus 42. Less severe form will respond to Phenobarbital therapy
Crohn's	43. IBD; ileocecum, transmural, skip lesions, cobblestones, lymphocytic infiltrate, granulomas 44. (contrast to UC: limited to colon, mucosa & submucosa, crypt abscesses, pseudopolyps, ↑ colon cancer risk) 45. Clinically: ab pain & diarrhea; fever; malabsorption; fistulae b/t intestinal loops & abd structures
Curling's Ulcer	46. Acute gastric ulcer associated with severe burns
Cushing's	47. Disease: **Hypercorti**cism 2° to ↑ ACTH from pituitary (basophilic adenoma) 48. Syndrome: hypercorticism of all other causes (1° adrenal or ectopic) 49. - moon face; buffalo hump; purple striae; hirsutism; HTN; hyperglycemia

Cushing's Ulcer	50. Acute gastric ulcer associated with CNS trauma
de Quervain's Thyroiditis	51. Self-limiting focal destruction (subacute thyroiditis)
DiGeorge's Syndrome	52. Failure of 3rd & 4th pharyngeal pouches formation: Thymus & Parathyroid 53. Thymic hypoplasia → T-cell deficiency 54. Hypoparathyroidism → Tetany
Down's Syndrome	55. Trisomy 21 or translocation – Simian Crease
Dressler's Syndrome	56. Post-MI Fibrinous Pericarditis autoimmune
Dubin-Johnson Syndrome	57. Congenital hyperbilirubinemia (*conjugated*) = bilirubin transposrt is defective not conjugation 58. Striking brown-to-black discoloration of the liver
Duchenne Muscular Dystrophy	59. Deficiency of dystrophin protein → MD X-linked recessive
Edwards' Syndrome	60. Trisomy 18 61. **Rocker-bottom feet**, low ears, small lower jaw, heart disease
Ehler's-Danlos	62. Defective collagen
Eisenmenger's Complex	63. Late cyanotic shunt (R→L) pulmonary HTN & RVH 2° to long-standing VSD, ASD, or PDA
Erb-Duchenne Palsy	64. Trauma to superior trunk of brachial plexus Waiter's Tip
Ewing Sarcoma	65. Malignant undifferentiated round cell tumor of bone in boys <15yoa - t11;22
Eyrthroplasia of Queyrat	66. Carcinoma in situ on **glans** penis
Fanconi's Syndrome	67. Impaired proximal tubular reabsorption 2° to lead poisoning or Tetracycline (glycosuria, hyperphosphaturia, aminoaciduria, systemic acidosis)
Felty's Syndrome	68. Rheumatoid arthritis, neutropenia, splenomegaly
Gardner's Syndrome	69. AD = adenomatous polyps of colon, osteomas & soft tissue tumors
Gaucher's Disease	70. Lysosomal Storage Disease glucocerebrosidase deficiency – glucocerebroside accumulation 71. Hepatosplenomegaly, femoral head & long bone erosion, anemia
Gilbert's Syndrome	72. Benign congenital hyperbilirubinemia (unconjugated) = ↓d glucuronyl transferase activity
Glanzmann's Thrombasthenia	73. Defective glycoproteins on platelets = deficient platelet *aggregation*
Goodpasture's	74. Autoimmune: ab's to glomerular & alveolar basement membranes. Seen in men in their 20's
Grave's Disease	75. Autoimmune hyperthyroidism (TSI): IgG Ab reactive w/ TSH receptors. Low TSH & TRH – High T3 / T4
Guillain-Barre	76. Polyneuritis following viral infection/ autoimmune (ascending muscle weakness & paralysis; usually self-limiting)
Hamman-Rich Syndrome	77. Idiopathic pulmonary fibrosis. Can see honey comb lung.
Hand-Schuller-Christian	78. Chronic progressive histiocytosis
Hashimoto's Thyroiditis	79. Autoimmune hypothyroidism. May have transient hyperthyroidism. Low T3 /T4 & High TSH
Hashitoxicosis	80. Initial hyperthyroidism in Hashimoto's Thyroiditis that precedes hypothyroidism
Henoch-Schonlein purpura	81. Hypersensivity vasculitis = allergic purpura. Lesions have the same age. 82. Hemmorhagic urticaria (with fever, arthralgias, GI & renal involvement) 83. Associated with upper respiratory infections
Hirschprung's Disease	84. Aganglionic megacolon
Horner's Syndrome	85. Ptosis, miosis, anhidrosis (lesion of cervical sympathetic nerves often 2° to a Pancoast tumor)
Huntington's (Chromosome 4)	86. AD: Progressive degeneration of caudate nucleus, putamen (striatum) & frontal cortex ↓ GABA
Jacksonian Seizures	87. Epileptic events originating in the primary motor cortex (area 4)
Job's Syndrome	1. Immune deficiency: neutrophils fail to respond to chemotactic stimuli 2. Defective neutrophilic chemotactic response = repeated infections 3. Commonly seen in light-skinned, red-haired girls 88. ↑'d IgE levels
Kaposi Sarcoma	89. Malignant vascular tumor (HHV8 in homosexual men)
Kartagener's Syndrome	90. Immotile cilia 2° to defective dynein arms infection, situs inversus, sterility
Kawasaki Disease	91. Mucocutaneous lymph node syndrome in kids (acute necrotizing vasculitis of lips, oral mucosa)
Klinefelter's Syndrome	92. 47, XXY: Long arms, Sterile, Hypogonadism
Kluver-Bucy	93. Bilateral lesions of amygdala (hypersexuality; oral behavior)
Krukenberg Tumor	94. Adenocarcinoma with signet-ring cells (typically originating from the stomach) metastases to 95. the ovaries
Laennec's Cirrhosis	96. Alcoholic cirrhosis
Lesch-Nyhan	97. HGPRT deficiency 98. Gout, retardation, self-mutilation
Letterer-Siwe	99. Acute disseminated Langerhans' cell histiocytosis
Libman-Sacks	100. Endocarditis with small vegetations on valve leaflets 101. Associated with SLE

Lou Gehrig's	102. Amyotrophic Lateral Sclerosis degeneration of upper & lower motor neurons
Mallory-Weis Syndrome	103. Bleeding from esophagogastric lacerations 2° to wretching (alcoholics)
Marfan's	104. Connective tissue defect: defective Fibrillin gene Dissecting aortic aneurysm, subluxation of lenses
McArdle's Disease	105. Type V Glycogenosis - Glycogen storage disease (muscle phosphorylase deficiency = ↑ Glycogen)
Meckel's Diverticulum	106. Rule of 2's: 2 inches long, 2 feet from the ileocecum, in 2% of the population 107. Embryonic duct origin; may have ectopic tissue: gastric/pancreatic remnant of vitteline duct/yolk stalk
Meig's Syndrome	108. Triad: ovarian fibroma, ascites, hydrothorax – associated w/ fibroma of ovaries
Menetrier's Disease	109. Giant hypertrophic gastritis (enlarged rugae; plasma protein loss)
Monckeberg's Arteriosclerosis	110. Calcification of the media (usually radial & ulnar aa.)
Munchausen Syndrome	111. Factitious disorder (consciously creates symptoms, but doesn't know why)
Nelson's Syndrome	112. 1° Adrenal Cushings → surgical removal of adrenals → loss of negative feedback to pituitary → Pituitary Adenoma
Niemann-Pick	113. Lysosomal Storage Disease (sphingomyelinase deficiency – sphingomyelin accumulation) 114. "Foamy histiocytes"
Osler-Weber-Rendu Syndrome	115. Hereditary Hemorrhagic Telangiectasia. Seen in the Mormon's of Utah.
Paget's Disease	116. Abnormal bone architecture (thickened, numerous fractures → pain)
Pancoast Tumor	117. Bronchogenic tumor with superior sulcus involvement → Horner's Syndrome
Parkinson's	118. Dopamine depletion in nigrostriatal tracts
Peutz-Jegher's Syndrome (AD)	119. Melanin pigmentation of lips, mouth, hand, genitalia + hamartomatous polyps of small intestine
Peyronie's Disease	120. Subcutaneous fibrosis of dorsum of penis
Pick's Disease – 2 Different Diseases -	121. 1. Progressive dementia similar to Alzheimer's 122. 1. Constrictive pericarditis – sequel to mediastinal tuberculosis 123. Calcium-frosting, unyielding layer – heart chambers may be unable to dilate to receive blood during diastole
Plummer's Syndrome	124. Hyperthyroidism, nodular goiter, absence of eye signs (Plummer's = Grave's - eye signs)
Plummer-Vinson	125. Esophageal webs & iron-deficiency anemia, spoon-shaped nails, ↑ SCCA of esophagus
Pompe's Disease	126. Type II Glycogenosis – Glycogen storage disease → cardiomegaly (α 1,4 Glucosidase deficiency: ↑ Glycogen)
Pott's Disease	127. Tuberculous osteomyelitis of the vertebrae
Potter's Complex	128. Renal agenesis → oligohydramnios → hypoplastic lungs, defects in extremities
Raynaud's	129. **Disease:** recurrent vasospasm in extremities = seen in young, healthy women 130. **Phenomenon:** 2° to underlying disease (SLE or scleroderma)
Reiter's Syndrome	131. Urethritis, conjunctivitis, arthritis non-infectious (but often follows infections), HLA-B27, polyarticular
Reye's Syndrome	132. Microvesicular fatty liver change & encephalopathy 133. 2° to aspirin ingestion in children following viral illness, especially VZV
Riedel's Thyroiditis	134. Idiopathic fibrous replacement of thyroid
Rotor Syndrome	135. Congenital hyperbilirubinemia (*conjugated*) 136. Similar to Dubin-Johnson, but no discoloration of the liver
Sezary Syndrome	137. Leukemic form of cutaneous T-cell lymphoma (mycosis fungoides)
Shaver's Disease	138. Aluminum inhalation → lung fibrosis
Sheehan's Syndrome	139. Postpartum pituitary necrosis = hemorrhage & shock usually occurred during delivery
Shy-Drager	140. Parkinsonism with autonomic dysfunction & orthostatic hypotension
Simmond's Disease	141. Pituitary cachexia – can occur from either pituitary tumors or Sheehan's
Sipple's Syndrome	142. MEN type IIa = pheochromocytoma, thyroid medullary CA, hyperparathyroidism
Sjogren's Syndrome	143. Triad: dry eyes, dry mouth, arthritis ↑ risk of B-cell lymphoma
Spitz Nevus	144. Juvenile melanoma (always benign)
Stein-Leventhal	145. Polycystic ovary: see amenorrhea; infertility; obesity; hirsutism = ↑↑LH secretion
Stevens-Johnson Syndrome	146. Erythema multiforme, fever, malaise, mucosal ulceration (often 2° to infection = mycoplasma or sulfa drugs)
Still's Disease	147. Juvenile rheumatoid arthritis (absence of rheumatoid factor)
Takayasu's arteritis	148. Aortic arch syndrome 149. Loss of carotid, radial or ulnar pulses = pulseless disease. Night sweats. 150. Common in young Asian females
Tay-Sachs (AR)	151. Gangliosidosis (hexosaminidase A deficiency → G_{M2} ganglioside) Cherry Red Spots of the Macula
Tetralogy of Fallot	152. 1.VSD, 2.overriding aorta, 3.pulmonary artery stenosis, 4.right ventricular hypertrophy
Tourette's Syndrome	153. Involuntary actions, both motor and vocal Txt w/ Pimozide
Turcot's Syndrome	154. Colon adenomatous polyps plus CNS tumors
Turner's Syndrome	155. 45, XO = most common cause of Primary Amenorrhea. No Barr body on buccal smear.

Vincent's Infection	156. "Trench mouth" – acute necrotizing ulcerative gingivitis due to **Fusobacterium**
Von Gierke's Disease	157. Type I Glycogenosis – Glycogen storage disease (G6Ptase deficiency) – Glycogen accumulaiton
Von Hippel-Lindau	158. Hemangioma (or hemangioblastoma) = cerebellum, brain stem, & retina 159. Adenomas of the viscera, especially ↑ Renal Cell Carcinoma 160. Chromosome 3p
Von Recklinghausen's	161. Neurofibromatosis & café au lait spots & Lisch nodules (Chromosome 17)
Von Recklinghausen's Disease of Bone	162. Osteitis fibrosa cystica ("brown tumor") 2° to hyperparathyroidism = osteoclastic resorption w/ 163. fibrous replacement
Von Willebrand's Disease (AD)	164. Defect in platelet adhesion 2° to deficiency in vWF. ↑aPPT, ↑ Bleed time
Waldenstrom's macroglobinemia	165. Proliferation of IgM-producing lymphoid cells in men 50-70 yoa; PAS(+) **Dutch**er bodies
Wallenberg's Syndrome	166. Posterior Inferior Cerebellar Artery (PICA) thrombosis "Medullary Syndrome" 167. Ipsilateral: ataxia, facial pain & temp; Contralateral: body pain & temp
Waterhouse-Friderichsen	168. Adrenal insufficiency 2° to DIC 169. DIC 2° to meningiococcemia
Weber's Syndrome	170. Paramedian Infarct of Midbrain 171. Ipsilateral: mydriasis; Contralateral: UMN paralysis (lower face & body)
Wegener's Granulomatosis	172. Necrotizing granulomatous vasculitis of paranasal sinuses, lungs, kidneys, etc.
Weil's Disease	173. Icteric Leptospirosis non-icteric prgresses to renal failure & myocarditis 174. Dark field microscopy for dx
Wermer's Syndrome	175. MEN type I = thyroid, parathyroid, adrenal cortex, pancreatic islets, pituitary
Wernicke's Aphasia	176. Sensory Aphasia impaired comprehension
Wernicke-Korsakoff Syndrome	177. Thiamine deficiency in alcoholics; bilateral mamillary bodies (mediodorsal nucleua) (confusion, ataxia, ophthalmoplegia)
Whipple's Disease	178. Malabsorption syndrome (with bacteria-laden macrophages) & polyarthritis
Wilson's Disease	179. Hepatolenticular degeneration (copper accumulation [Txt w/ Penicillamine] & decrease in ceruloplasmin) 180. Mallory Bodies in the Liver & also w/ alcoholic hepatitis & Hyaline change 181. Chromosome 13
Wiskott-Aldrich Syndrome	182. Immunodeficiency: combined B- &T-cell deficiency (thrombocytopenia & eczema) 183. ↓ IgM w/ ↑ IgA
Wolff-Chaikoff Effect	184. High iodine level (–)'s thyroid hormone synthesis
Zenker's Diverticulum	185. Esophageal; cricopharyngeal muscles above UES
Zollinger-Ellison	186. Gastrin-secreting tumor of pancreas (or intestine) → ↑ acid → recurrent ulcers
Roger's Disease	187. Interventricular septal defect
Barlow's Syndrome	188. Floppy vale syndrome – women b/t 20-40 yoa
Bracht-Wachter Lesions	189. Minute abscesses found in subacute bacterial endocarditis
Lutembacher's Syndrome	190. Combination of septum secundum atrial septal defect w/ mitral stenosis
Schmidt's Syndrome	191. Autoimmnue thyroid Disease (Hashimoto's) & insulin-dependent diabetes

Hallmark Findings

Albumino-Cytologic Dissociation	192. Guillain-Barre (markedly increased protein in CSF with only modest increase in cell count)
Antiplatelet Antibodies	193. Idiopathic thrombocytopenic purpura
Arachnodactyly	194. Marfan's
Aschoff Bodies	195. Rheumatic fever
Auer Rods	196. Acute promyelocytic leukemia (AML type M_3)
Autosplenectomy	197. Sickle cell anemia: switch a glu → val in β chain 198. Low O_2 ↑ sickling 199. Aplastic crisis w/ B19 (Parvovirus ssDNA) infection 200. Salmonella osteomyelitis 201. Vaso-occlusive painful crisises 202. Hydroxyurea as Txt (↑ Hb^F) & Bone marrow transplant
Babinski	203. UMN lesion
Basophilic Stippling of RBCs	204. Lead poisoning
Bence Jones Protein	205. Multiple myeloma free light chains (either kappa or lambda) 206. Waldenstrom's macroglobinemia
Birbeck Granules	207. Histiocytosis X (eosinophilic granuloma)
Blue Bloater	208. Chronic Bronchitis (at least 3 months for at least 2 years of ecessive mucus secretion & chronic recurrent productive cough)

Boot-Shaped Heart	209. Tetralogy of Fallot
Bouchard's Nodes	210. Osteoarthritis (Proximal IP joint of the fingers)
Boutonniere's Deformity	211. Rheumatoid arthritis flex proximal & extend distal IP joints
Brown Tumor	212. Hyperparathyroidism
Brushfield Spots	213. Down's
Call-Exner Bodies	214. Granulosa cell tumor: associated w/ endometrial hyperplasia & carcinoma 215. Granuloma-Theca cell tumor
Cardiomegaly with Apical Atrophy	216. Chagas' Disease
Chancre	217. 1° Syphilis
Chancroid	218. *Haemophilus ducreyi*
Charcot Triad	219. Multiple sclerosis = nystagmus, intention tremor, scanning speech
Charcot-Leyden Crystals	220. Bronchial asthma
Cheyne-Stokes Breathing	221. Cerebral lesion
Chocolate Cysts	222. Endometriosis
Chvostek's Sign	223. Hypocalcemia facial spasm in tetany
Clue Cells	224. Gardnerella vaginitis
Codman's Triangle	225. Osteosarcoma
Cold Agglutinins	226. *Mycoplasma pneumoniae* 227. Infectious mononucleosis
Condyloma Lata	228. 2° Syphilis 229. New coffee flavor at Bagel & Bagel
Cotton Wool Spots	230. HTN 231. Aka, cytoid bodies seen w/ SLE (yellowish cotton wool fundal lesions)
Councilman Bodies	232. Dying hepatocytes – HepB
Crescents In Bowman's Capsule	233. Rapidly progressive (crescentic glomerulonephritis)
Currant-Jelly Sputum	*234. Klebsiella*
Curschmann's Spirals	235. Bronchial asthma
Depigmentation Of Substantia Nigra	236. Parkinson's
Donovan Bodies	237. Granuloma inguinale (STD)
Eburnation	238. Osteoarthritis (polished, ivory-like appearance of bone)
Ectopia Lentis	239. Marfan's
Erythema Chronicum Migrans	240. Lyme Disease
Fatty Liver	241. Alcoholism
Ferruginous Bodies	242. Asbestosis - & Iron laden
Ghon Focus / Complex	243. Tuberculosis (1° & 2°, respectively)
Glitter Cells	244. Acute Pyelonephritis
Gower's Maneuver	245. Duchenne's MD use of arms to stand
Heberden's Nodes	246. Osteoarthritis (Distal IP joint of the fingers)
Heinz Bodies	247. G6PDH Deficiency
Heterophil Antibodies	248. Infectious mononucleosis (EBV)
Hirano Bodies	249. Alzheimer's
Hypersegmented PMNs	250. Megaloblastic anemia
Hypochromic Microcytic RBCs	251. Iron-deficiency anemia or β Thalassemia
Jarisch-Herxheimer Reaction	*252.* Syphilis over-aggressive treatment of an asymptomatic pt. that causes symptoms 2° to rapid lysis
Joint Mice	253. Osteoarthritis (fractured osteophytes)
Kaussmaul Breathing	254. Acidosis / **Diabetic** Ketoacidosis
Keratin Pearls	255. Squamous Cell CA of skin Actinic Keratosis is a precursor
Keyser-Fleischer Ring	256. Wilson's
Kimmelstiel-Wilson Nodules	257. Diabetic nephropathy: Nodular Glomerulosclerosis nodules of mesangial matrix
Koilocytes	258. HPV 6 & 11 (condyloma acuminatum - benign) and HPV 16 & 18 (malignant association)
Koplik Spots	259. Measles
Lewy Bodies	260. Parkinson's (eosinophilic inclusions in damaged substantia nigra cells)
Lines of Zahn	261. Arterial thrombus
Lisch Nodules	262. Neurofibromatosis (von Recklinhausen's disease) = pigmented iris hamartomas

Lumpy-Bumpy IF Glomeruli	263. Poststreptococcal glomerulonephritis – prototype of nephritic syndrome
Mallory Bodies	264. Alcoholic hepatitis
McBurney's Sign	265. Appendicitis (McBurney's Point is 2/3 of the way from the umbilicus to anterior superior iliac spine)
Michealis-Gutmann Bodies	266. Malakoplakia lesion on bladder due to macros & calcospherites (M-G Bodies): usually due to E. Coli
Monoclonal Antibody Spike	267. Multiple myeloma this is called the M protein (usually IgG or IgA) 268. MGUS
Myxedema	269. Hypothyroidism
Negri Bodies	270. Rabies
Neuritic Plaques	271. Alzheimer's
Neurofibrillary Tangles	272. Alzheimer's
Non-pitting Edema	273. Myxedema 274. Anthrax Toxin
Notching of Ribs	275. Coarctation of Aorta
Nutmeg Liver	276. CHF = causing congested liver
Owls Eye Cells	277. CMV 278. Reed Sternburg Cells (Hodkins Lymphoma) 279. Aschoff cells seen w/ Rheumatic Fever
Painless Jaundice	280. Pancreatic CA (head)
Pannus	281. Rheumatoid arthritis, also see morning stiffnes that ↓ w/ joint use, HLA-DR4
Pautrier's Microabscesses	282. Mycosis fungoides (cutaneous T-cell lymphoma), Sezary
Philadelphia Chromosome	283. CML
Pick Bodies	284. Pick's Disease
2 types of COPD	285. Pink Puffer – Type A: Emphysema 286. Blue Bloater – Type B: Bronchitis 287. Emphysema Centroacinar – smoking Panacinar - α_1-antitrypsin deficiency
Podagra	288. Gout (MP joint of hallux)
Port-Wine Stain	289. Hemangioma
Posterior Anterior Drawer Sign	290. Tearing of the ACL
Psammoma Bodies	291. Papillary adenocarcinoma of the thyroid 292. Serous papillary cystadenocarcinoma of the ovary 293. Meningioma 294. Mesothelioma
Pseudohypertrophy	295. Seen w/ Duchenne muscular dystrophy @ the claf muscles, due to ↑ fat
Punched-Out Bone Lesions	296. Multiple myeloma
Rash on Palms & Soles	297. 2° Syphilis 298. RMSF 299. Coxsackie virus infection: Hand-Foot-Mouth Disease
Red Morning Urine	300. Paroxysmal nocturnal hemoglobinuria. You would use **Ham's test** to confirm.
Reed-Sternberg Cells	301. Hodgkin's Disease
Reid Index Increased	302. Chronic bronchitis = ↑d ratio of bronchial gland to bronchial wall thickness
Reinke Crystals	303. Leydig cell tumor
Rouleaux Formation	304. Multiple myeloma RBC's stacked as poker chips
S3 Heart Sound	305. L→R Shunt (VSD, PDA, ASD) 306. Mitral Regurg 307. LV Failure
S4 Heart Sound	308. Pulmonary Stenosis 309. Pulmonary HTN
Schwartzman Reaction	*310. Neisseria meningitidis* impressive rash with bugs
Smith Antigen	311. SLE (also anti-dsDNA) 312. Malar Rash, Wire loop kidney lesions, Joint pain, False (+) syphilis test (VDRL) 313. 90% 14-45 yo females 314. also seen w/ use of INH; Procainamide; Hydralazine = SLE-like syndrome
Soap Bubble on X-Ray	315. Giant cell tumor of bone
Spike & Dome Glomeruli	316. Membranous glomerulonephritis = Nephrotic syndrome 317. Spike = basement membrane material & Dome = immune complex deposits (IgG orC3)
String Sign on X-ray	318. Crohn's bowel wall thickening
Target Cells	319. Thalassemia in α Thalassemia w/ no α gene: Hydrops Fetalis & Intrauterine death associations = HbBarts

Tendinous Xanthomas	320. Familial Hypercholesterolemia
Thyroidization of Kidney	321. Chronic pyelonephritis
Tophi	322. Gout
Tram-Track Glomeruli	323. Membranoproliferative GN: Nephritic syndrome – basement membrane is duplicated into 2 layers
Trousseau's Sign	324. Visceral ca, classically pancreatic (migratory thrombophlebitis) 325. Hypocalcemia (carpal spasm) *326. These are two entirely different disease processes and different signs, but they unfortunately have the same name.*
Virchow's Node	327. Supraclavicular node enlargement by metastatic carcinoma of the stomach
Warthin-Finkeldey Giant Cells	328. Measles
WBC Casts	329. Pyelonephritis
Whipple's Triad	330. CNS disfunction – Hypoglycemic episodes – glu injection reverses CNS Sympt's
Wire Loop Glomeruli	331. Lupus nephropathy, type IV (diffuse proliferative form)
↑ AFP in amniotic fluid or mother's serum	332. Spina Bifida 333. Anencephaly
↑ Uric Acid	334. Gout 335. Lesch Nyhan 336. Myeloproliferative Disorders 337. Diuretics (Loop & Thiazides)
↓ FEV_1/FVC	338. COPD
"Ground Glass" on chest x-ray (Hyaline)	339. Due to Pneumocystis carinii 340. Seen w/ Atelectasia
Honey Combing of the lung	341. Seen w/ Asbestosis (a restrictive lung disease)
Crescents	342. Goodpastures syndrome (pneumonia w/ hemoptysis & rapidly progressive glomerulonephritis)
Linear Ig Deposits	343. Goodpastures syndrome
45 Degree Branch Points	344. Aspergillosis
PAS(+) Dutcher Bodies	345. Waldenstrom's Macroglobulinemia = ↑IgM = Hyperviscosity
"Ground Glass" in Abdomen(Hyaline)	346. Seen in the hepatocytes of healthy carriers of HBsAg in liver biopsies
"Signet Ring" Cells	347. Cells that replace the ovaries, due to Krukenberg's tumor that has metastasized from the stomach
Ground Glass Appearance (Hyaline)	348. Seen w/ Progressive Multifocal Leukoencephalopathy oligodendrocytes 349. Nuclei seen in Papillary CA of the thyroid (malignant)
Congo Red	350. Shows amyloid deposition in plaques & vascular walls
Meningiomas & Progesterone	351. Some meningiomas have Progesterone receptors = rapid growth in pregnancy can occur
Tuberous Sclerosis Triad	352. Seizures; Mental retardation; Leukoderma (congenital facial white spots or macules): angiofibromas
Cowdry A Inclusions	353. Seen w/ Herpes Simplex Encephalitis – in oligodendroglia
Devic's Syndrome	354. "Neuromyelitis Optica" 355. A variant of multiple sclerosis: rapid demyelination of the optic nerve & spinal cord w/ paraplegia
c-erb B2	356. Breast Cancer association
Foster-Kennedy Syndrome	357. A tumor causing blindness & loss of smell w/ papilloedema
Hoffman's Sign	358. Flicking of the middle finger's nail
Red Nucleus Destruction	359. Intention tremors of the arm
Ventral Spinocerebellar tr.	360. Unconscious proprioception of lower extremities
Dorsal Spinocerebellar tr.	361. Unconscious prorpioception & fine motor movements
Cuneocerebellar tr.	362. Unconscious proprioception & fine motor movements of upper extremities
Dorsal Column	363. Conscious proprioception of the body
Lateral Spinothalamic tr.	364. Pain & Temperature sensation
Ventral Spinothalamic tr.	365. Light touch perception
SVA	366. Taste & Smell
GSE	367. Muscles of the eye & of the tongue
SSA	368. Vision; Hearing; Equilibrium
GVA	369. Sensation of tongue; soft palate. Carotid Body & Sinus innervation
GVE	370. Edinger Westphal = parasympathetic eye innervation 371. Gland innervation = secretions

	372. Viscera
GSA	373. Pain & temperature of face 374. Sensation of external ear
SVE	375. Innervation of muscles of masticaiton, facial expressions, larynx & pharynx
LMN Lesion	376. Werndig Hoffman (progressive infantile muscular atrophy) 377. Poliomyelitis
Sensory Pathway Lesion	378. Subacute Combined Degeneration = Friedrich's Ataxia = B12 deficiency 379. Tabes Dorsalis (Neurosyphilis)
Both UMN & LMN Lesion	380. ALS = Lou Gherig's Disease
Both Sensory & Motor Lesion	381. Brown Sequard 382. Anterior Spinal artery Occlusion
Suprachiasmatic Nucleus	383. Controls circadian rhythm
Ventromedial Nucleus	384. Satiety center. Savage behavior & obesity when lesioned
Lateral Nucleus	385. Induces eating. Starvation when lesioned
Arcuate Nucleus	386. Releases PIF (dopa-ergic neurons)
Mamillary Body	387. Can have hemorrhages as seen in Wernicke's Encephalopathy
Acanthocytes	388. RBSc w/ spiny projections. Seen in Abetalipoproteinemia.

Most Common…

1° Tumor arising from bone in adults	389. Osteosarcoma
Adrenal Medullary Tumor – Adults	390. Pheochromocytoma: 5 P's: ↑ Pressure; Pain (Headache); Perspiration; Palpitations; Pallor/Diaphoresis
Adrenal Medullary Tumor – Children	391. Neuroblastoma
Agent of severe viral encephalitis	392. Herpes simplex
Aggressive lung tumor	393. Small cell or oat cell
Associated with gallstones	394. Adenocarinoma
Bacterial Meningitis – adults	*395. Strep pneumoniae* & in young adults = *Neisseria meningitidis*
Bacterial Meningitis – elderly	*396. Neisseria meningitidis*
Bacterial Meningitis – newborns	*397. E. coli* / Group BStrep.
Bacterial Meningitis – toddlers	398. Hib
Benign epithelial tumor of oral mucosa	399. Papilloma
Benign fallopian tube tumor	400. Adenomatoid
Benign ovarian tumor	401. Mature(Native) Teratoma = benign dermatoid
Benign tumor of soft tissue	402. Lipoma
Benign tumor of the breast <25yoa	403. Fibroadenoma
Benign tumor of the liver	404. Hemangioma
Benign tumor of the vulva	405. Hidroadenoma
Benign uterine tumor	406. Leiomyoma: estrogen sinsitive: changes size during pregnancy & menopause
Bone Tumors	407. Metasteses from Breast & Prostate
Brain Tumor – Child	408. Medulloblastoma (cerebellum)
Brain Tumor –Adult	409. Astrocytoma (including Glioblastoma Multiforme) then: mets, meningioma, Schwannoma
Breast Carcinoma	410. Invasive Duct Carcinoma
Breast Mass	411. Fibrocystic Change: premenopausic women (Carcinoma is the most common in post-menopausal women)
Bug in Acute Endocarditis	*412. Staph aureus*
Bug in debilitated, hospitalized pneumonia pt	*413. Klebsiella*

Bug in Epiglottitis	414. Hib
Bug in GI Tract	415. Bacteroides (2nd – E. coli)
Bug in IV drug user bacteremia / pneumonia	*416. Staph aureus*
Bug in PID	417. N. Gonnorrhoeae
Bug in Subacute Endocarditis	*418. Strep Viridans*
CA of urinary collecting system	419. Transitional cell CA (assoc. w/ benzidine; βnaphthylamine; analine dyes; long term txt w/ cyclophosphamide)
Cardiac 1ry Tumor – Adults	420. Myxoma: "Ball Valve"
Cardiac 1ry Tumor – Child	421. Rhabdomyoma – associated w/ Tuberous sclerosis
Cardiac Tumor – Adults	422. Metasteses
Cardiomyopathy	423. Dilated (Congestive) Cardiomyopathy: Alcohol, BeriBeri, Cocaine use, Coxsackie B, Doxorubicin 424. Systolic Dysfunction
Cause of 2ry HTN	425. Renal Disease
Cause of Addison's	426. Autoimmune (2nd – infection)
Cause of breast lumps	427. CA of the breast
Cause of chronic endometriosis	428. TB
Cause of Congenital Adrenal Hyperplasia	429. 21-Hydroxylase Deficiency: NaCl lost & Hypotension (then, 11- NaCl retention & HTN)
Cause of Cushings	430. Exogenous Steroid Therapy (then, 1ry ACTH, Adrenal Adenoma, Ectopic ACTH)
Cause of Death in Alzheimer pts	431. Pneumonia
Cause of Death in Diabetics	432. MI
Cause of Death in premature	433. NRDS = hyaline membrane disease
Cause of Death in SLE pts.	434. Lupus Nephropathy Type IV (Diffuse Proliferative) = Renal Disease
Cause of Dementia	435. Alzheimer's
Cause of Dementia (2nd most common)	436. Multi-Infarct Dementia
Cause of Dwarfism	437. Achondroplasia
Cause of Food poisoning	*438. Staph aureus*
Cause of Hematosalpynga	439. Ectopic pregnancy
Cause of Hypoparathyroidism	440. Throidectomy
Cause of Hypothyroidism	441. Corrective surgery I31 treatment
Cause of Kidney infections	442. E. coli
Cause of Liver disease in US	443. Alcohol consumption
Cause of Malignancy in children	444. Acute leukemia
Cause of Mental retardation	445. Down's
Cause of Mental retardation (2nd most common)	446. Fragile X
Cause of NaCl loss and Hypotension	447. 21 hydroxylase deficiency
Cause of PID	448. N. ghonorrhea
Cause of Portal cirrhosis	449. Alcohol
Cause of Preventable Blindness	450. Chlamydia (serotypes A,B,Ba,C)
Cause of Pulmonary HTN	451. COPD
Cause of Secondary Hypertension	452. Renal disease
Cause of SIADH	453. Small Cell Carcinoma of the Lung
Cause of UT Obstruction in men	454. BPHyperplasia

Cause Pernicious Anemia	455. Chronic atrophic gastritis = no production of intrinsic factor
Chromosomal Disorder	456. Down's
Common Tumor of the Appendix	457. Carcinoid tumor: flushing; diarrhea; bronchospasm; RHeart valvular lesions 458. Txt: Methysergide (5HT antagonist)
Congenital Cardiac Anomaly	459. VSD (membranous > muscular)
Congenital Early Cyanosis	460. Tetralogy of Fallot =right to left shunt
Coronary Artery Thrombosis	461. LAD artery: MI
Demyelinating Disease	462. Multiple Sclerosis: (Charcot Triad = nystagmus, intention tremor, scanning speech) 463. Periventricular plaques w/ ↓ Oligodenrocytes 464. ↑ IgG in CSF, Optic Neuritis, MLF Syndorme = Internuclear Ophthalmoplegia, bladder incontinence
Dental Tumor	465. Odontoma
Dietary Deficiency	466. Iron
Disease of the Breast	467. Fibrocystic disease
Disseminated Opportunistic Infection in AIDS	468. CMV (*Pneumocystis carinii* is most common overall)
Esophageal Cancer	469. SCCA
Fallopian Tube Malignancy	470. AdenoCA
Fatal Genetic Defect in Caucasians	471. Cystic Fibrosis (chromosome 7q)
Female Tumor	472. Leimyoma
Form of Amyloidosis	473. Immunologic (Bence Jones protein in multiple myeloma is also called the Amyloid Light Chain)
Form of Tularemia	474. Ulceroglandular
Germ Cell Tumor of Testes	475. Seminoma (analogous to dysgerminoma of ovaries)
Gynecological Malignancy	476. Endometrial Carcinoma
Gynecological Finding	477. Endometrial CA
Heart Murmur	478. Mitral Valve Prolapse
Heart Valve in Bacterial Endocarditis	479. Mitral
Heart Valve in Bacterial Endocarditis in IV drug users	480. Tricuspid
Heart Valve involved in Rheumatic Fever	481. Mitral then Aortic
Hereditary Bleeding Disorder	482. Von Willebrand's Disease
Hormone secreted in Pituitary Adenoma	483. Prolactin
Inherited disease of the Kidney	484. Adult polycystic kidney disease: associated w/ polycystic liver, Berry aneurysms, Mitral prolapse 485. APD1 – chromosome 16
Intracranial tumor in adults	486. Glioblastoma mulitforme
Islet Tumor	487. Insulinoma = β cell tumor
Liver 1^{ry} Tumor	488. Hepatoma
Liver Disease	489. Alcoholic Liver Disease
Location of Adenocarcinoma of the Pancreas	490. Head (99%)
Location of Adult Brain Tumors	491. Above Tentorium
Location of Childhood Brain Tumors	492. Below Tentorium
Lung Tumor, malignant or benign	493. Malignant
Lung Tumor, primary or secondary	494. Secondary
Lysosomal Storage Disease	495. Gaucher's
Malignancy in Women	496. Lung (2nd breast)
Malignancy of the Larynx	497. Glottic CA (squamous cell)

Malignancy of the Small Intestine	498. Adenocarcinoma
Malignancy Vulva	499. Squamous cell CA
Malignant Eye Tumor in Kids	500. Retinoblastoma
Malignant Tumor of the Liver	501. Hepatocellular CA
Motor Neuron Disease	502. ALS
Muscular Dystrophy	503. Duchenne's: Dystrophin deletion. Presents <5yoa weakness at pelvic girdles w/ upward progression
Nasal Tumor	504. Squamous cell CA
Neoplasm – Child	505. Leukemia
Neoplasm – Child (2nd most common)	506. Medulloblastoma of brain (cerebellum)
Neoplasm of the West	507. Adeno CA of the rectum and/or colon
Neoplastic Polyp	508. Tubular adenoma
Nephrotic Syndrome in Adults	509. Membranous Glomerulonephritis
Nephrotic Syndrome in Children	510. Minimal Change (Lipoid Nephrosis) Disease (responds well to steroid txt)
Non Hodgkin's Lymphoma	511. Follicular small clear cell
Number of Deaths per year in Women	512. Lung CA
Skin tumor	513. Basal cell CA
Opportunistic infection in AIDS	514. PCP
Ovarian Malignancy	515. Serous Cystadenocarcinoma
Ovarian Tumor	516. Hamartoma
Pancreatic Tumor	517. Adeno (usually in the head)
Patient with ALL / CLL / AML / CML	518. ALL – Child / CLL – Adult over 60 / AML - Adult over 60 / CML – Adult 35-50
Patient with Goodpasture's	519. Young male
Patient with Reiter's	520. Male
Pituitary Tumor	521. Prolactinoma (2nd – Somatotropic "Acidophilic" Adenoma)
Place for Primary Squamous Cell CA of esophagus	522. Mid 1/3
Place for Peptic Ulcer Disease	523. Lesser curvuture in antrum – associated w/ blood group O
Primary Benign Salivary Tumor	524. Pleomorphic Adenoma (Mixed) – 90% localized to the parotid
Primary Hyperparathyroidism	525. Adenomas (followed by: hyperplasia, then carcinoma)
Primary Malignancy of Bone	526. Osteosarcoma
Primary Malignancy of Small Intestine	527. Lymphoma
Pt. with Hodgkin's	528. Young Male (except Nodular Sclerosis type – Female)
Pt. with Minimal Change Disease	529. Young Child
Renal Malignancy	530. Renal cell CA
Renal Malignancy of Early Childhood	531. Wilm's tumor (neohroblastoma) – chromosome 11p
Salivary Tumor	532. Pleomorphic adenoma
Secondary Hyperparathyroidism	533. Hypocalcemia of Chronic Renal Failure
Sexually Transmitted Disease	534. Chlamydia (sero types D-K)
Site of Diverticula	535. Sigmoid Colon

Site of Embolic Occlusion	536. Middle cerebral aa: contralateral paralysis; aphasias; motor & sensory loss
Site of Metastasis	537. Regional Lymph Nodes
Site of Metastasis (2nd most common)	538. Liver
Sites of Atherosclerosis	539. Abdominal aorta > coronary > popliteal > carotid
Skin CA of Fair Skinned People	540. Malignant melanoma
Skin Cancer	541. Basal Cell Carcinoma
Small Intestine Congenital Anomaly	542. Meckel's diverticulum
Stomach Cancer	543. Adeno – associated w/ blood group A
Testicular Tumor	544. Seminoma = malignant painless testes growth
Thyroid Anomaly	545. Thryoglossal duct cyst
Thyroid CA	546. Papillary CA
Tracheoesophageal Fistula	547. Lower esophagus joins trachea / upper esophagus – blind pouch – polyhydramnios association
Tumor in men <20	548. Germ cell tumor
Tumor of Infancy	549. Benign vascular tumor = port wine stain = Hemangioma
Tumor of the Stomach >50 years of age	550. CA of stomach (adeno CA)
Type of Hodgkin's	551. Mixed Cellularity (versus: lymphocytic predominance, lymphocytic depletion, nodular sclerosis)
Type of Non-Hodgkin's	552. Follicular, small cleaved
Type of Portal Cirrhosis	553. Micronodular
Type of Soft Tissue Tumor of Childhood	554. Rhabdomyosarcoma
Vasculitis (of medium & small arteries)	555. Temporal Arteritis (branch of Carotid Artery)
Viral Encephalitis	556. HSV
Worm Infection in US	557. Pinworm (2nd – Ascaris)
Worst Prognosis in Thyroid Cas	558. Follicular CA
Cause of Lobar Pneumonia	559. Strep. Pneumoniae
Cause of Death b/t 24-44 yoa	560. AIDS
Cause of Pneumonia in Cystic Fibrosis	561. Pseudomonas
Cause of Osteomyelitis in IV Drug Users	562. Pseudomonas
Cause of Infection in Burn Pts	563. Pseudomonas
Mental Problem in Males	564. Specific phobia
Intelligence Test	565. Stanford Binet (ages 6 & under) 566. WIPSI (ages 4-6) 567. WISK-R (for ages 6-17) 568. WAIS-R (for > 17 yoa)
Paraphilia	569. Pedophilia
Metabolite seen w/ Pheochromocytoma	570. VMA: vanillylmandelic acid (NE metabolite)
Severe Shigella	571. Dysenteriae
Bug in Otitis Media & Sinusitis in Kids	572. Strep. Pneumoniae
Cause of a Solitary Brain Abscess	573. A. Israelli
Cause of Bacterial Diarrhea in U.S.	574. Campylobacter jejuni
Shigella Type	575. S. Sonnei

Cause of Non-Ghonococcal Urethritis	576. Chlamydia trichomonas
Pneumonia	577. Strep. Pneumoniae
Urethritis	578. N. ghonorrhea
Cause of Glomerulonephritis	579. IgA Nephropathy = Berger's Disease
Cause of Viral Pneumonia	580. RSV – infants 581. Parainfluenza – kids 582. Influenza virus – adults 583. Adeno virus – military recruits
Complication of COPD	584. Pulmonary infections
Cause of Death w/ SLE	585. Renal failure
Atrial Septal Defect	586. Ostium Secundum Type
Warm Antibody	587. Most common form of immune hemolytic anemia 588. IgG auto antibodies to RBC 589. See spherocytosis; (+) Coombs' test; complication to CLL
Immunodeficiency	590. IgA Deficiency
Congenital GIT Anomaly	591. Meckel's Diverticulum: persistence of vitelline duct/yolk sac stalk
Cause of Congenital Malformation	592. Fetal Alcohol Syndrome

Pharmacology

Autonomic Nervous System

Epinephrine	1. α1, α2, β1, β2
Norepinephrine	2. α1, α2, β1 (no β2 activity)
GABA	3. Causes an inhibitory cell hyperpolarization
Muscarinic-r	4. Uses DAG & IP3 as 2nd messengers 5. Parasympathetic control
Bethanechol	6. Cholinergic. ↑ GI & Bladder motility. **Txt atonic bladder post-op**
Pilocarpine	7. Cholinergic. Pupillary constriciton= miosis. Ciliary constriction= accomodation. 8. **Txt acute glaucoma**
Isoflurophate	9. Organophosphate. Irreversible acetylcholinesterase (-)r
Pralidoxime	10. "2PAM". Reverses organophosphate binding to acetylcholinesterase
Neostigmine	11. Reversible acetylcholinesterase (-)r **12. Txt Myasthenia Gravis**
Myasthenia Gravis	13. Anitbodies to Ach-r. ↑'g muscular weakness due to Ach's weak postsynaptic effect @ NMJ. Inactivates-r
Tubocurium	14. Nondepol. Competitive cholinergic N-r (-)r. 15. Prevents Ach binding but does not activate NMJ 16. ↑ Histamine release= ↓ BP & ↑ bronchospasm
Trimethaphan	17. Nonselectively binds N-r of the PS- and SNS
Pancurium	18. More potent than tubocurium w/o histamine release
Succinylcholine	19. Depol. Non competitive (-)r of muscle aciton 20. Opens Na Ch.= fasciculations. Closes Na Ch.= paralysis. Continuous infusion.
α1 & Eye	21. Mydriasis due to norepinephrine. Prazosin (-).
M-r & Eye	22. Miosis due to Ach. Atropine (-).
Sympathetic	23. Post ganglionic symapthetic fibers releases norepinephrine
Parasym.	24. Post ganglionic parasympathetic fibers release Ach
M3-r & Eye	25. Contracts sphincter = miosis. Contracts ciliary = accomodation.
M2-r & Heart	26. Negative chronotropy: ↓ HR = vagal arrest 27. Negative inotropy: ↓ contractility
M3-r & Lung	28. Bronchospasm ↑secretions
M3-r & GI	29. ↑ motility (cramps & diarrhea). Involuntary defecation
Tacrine	30. Acetylcholine esterase (-)r. **Txt Alzheimer's**
Atropine	**31. DOC w/ vagal arrest**
Glycoperrolate	32. M-r(-). Antispasmodic. Txt peptic ulcers.
Pirenzepine	33. M-r(-). Antispasmodic. Txt peptic ulcers.

Doxacurium	34. Most potent competitive non-depol NMJ (-)r. No cardiovascular side effects. No Histamine release.
β bungarotoxin	35. Prevent the releasal of Ach from vesicles @ the pre synaptic nerve ending
α bungarotoxin	36. Irreversible N-r (-)r = ↓ action potentials
α1 & Eye	37. Contracts radial muscle = mydriasis (pupil dilation)
α1 & Arterioles	38. Consticti0n: ↑TPR = ↑ Diastolic pressure = ↑ Afterload
α1 & Venules	39. Constriction: ↑ Venous return = ↑ Preload
α1 & Sex Function	40. Ejaculation
↑ Diastolic	41. ↑ α1 = ↑TPR
↓ Diastolic	42. ↑ β2; Direct acting vasodilators; (+)Cholinergics
β1 & Heart	43. (+)chronotropism = ↑HR. 44. (+)inotropism = ↑ contractility; ↑SV; ↑CO; ↑O_2 consumption. 45. ↑ conduction velocity
Phenylephrine	46. α1 (+) Nasal decongestant.
β2(+) Asma Drugs	47. Metaproterenol; Albuterol; Terbutaline; Ritodrine; Salmeterol
Ritodrine/Turbutaline	48. Relaxes myometrium used in pre-mature labor pains
Phentolamine	49. Epi reversal. Blocks α, vasodilation occurs. Pt goes from HyperTN to HypoTN. **50. Txt pheochromocytoma = ↓BP**
Terazosin	**51. Txt BPH**
Yohimbine	52. ↑ sympathetic outflow = α2 (-). **Txt impotence.**
Cardioselective NMJ	53. Pancuronium = ↑HR due to atropine-like anti muscarinic vagolytic effect & Gallamine (-)r
Ecothiophate	54. Irreversible cholinesterase (-)r.
Pyridostigmine	55. Cholinomimetic that ↑s M & N-r effects. (-) acetylcholinesterase & plasma cholinesterase **56. DOC for the oral Txt of MG**

Cardiology

Digoxin	1. ↓ AV nodal conduction/ inh. Na/K/Atpase = inc. Ca conc. in heart cells = inc. contraction force
Diltiazem	2. Txt black men. Txt AV nodal re entrance
Quinidine	3. ↓ AV nodal conduction. Cinchonism. Anticholinergic= aggravate MG. Hypotension= α block
Verapamil	4. ↓ AV nodal conduction. ↓ BP. Negative inotrope= no CHF use
Propranolol	5. ↓ AV nodal conduction. ↓ BP. Negative inotrope(= β block) Aggravates Asthma and Diabetes Melitus via β2 block.
Diazoxide	6. Balanced vasodilator.
Niroprusside	7. Balanced vasodilator. Unloads heart. ↑s cyanide= pre-txt w/ thiosulfate. Txt Acute HTN'v Crisis
Reserpine	8. **Txt severe & resistant HTN**. Depletes CA. See stuffy nose. No to pts w/ peptic ulcers.
Dobutamine	9. At high doses β2(+) offsets α1 = β1 ↑ CO w/o systemic vascular resistance
Dopamine	10. At low doses Txt Shock= dilates renal and mesenteric aa= maintain urine output
Esmolol	11. Short acting β(-)
Captopril	12. Balanced vasodilator. Txt Outpt. CHF see dry cough(bradykinin induced)
Digoxin	13. **Txt CHF & Atrial Flutter** - inotropic - ↓ K+ levels= dig. Toxicity
Dig. Toxicity	14. Fatal ventricular arrhythmias w/ sever AV block
Quinidine	15. ClassIa anti arrhythmic. Moderate Na Ch. Block
Lidocaine	16. ClassIb anit arrhythmic. Normalizes conduction. Txt initial MI= control arrhythmias
Flecanide	17. ClassIc anti arrhythmic. Marked conduction slowing
Amiodarone	18. Long t1/2= need potent doses to obtain desired level for action. See blue skin, ocular deposits, Pulmonary Fibrosis.
NE	19. ↑ AV nodal conduction via β1. Metoprolol(-) β1
Ach	20. ↓ AV nodal conduction via M receptor. Atorpine(-) M-r
Atenolol	21. Controls catecholamine induced arrhythmias
Bretylium	22. **Txt Malignant Ventricular Arrhythmias** but causes passing catecholamine release that can aggravate arrhythmias briefly
Nimodipine	23. **Txt Acute subarachnoid hemorrhage** by preventing post hemorrhagic vasospasm
Atropine	24. ↓ excess vagal tone as seen in Sinus Bradycardia
Nitrates	25. ↓ preload= venous pooling. ↓ MVO2= reflex tachy. ↑ ventr work= dec O2 demand
Propranolol	26. Blocks reflex tachy but causes excess brady= ↑ diastole time= ↑ EDV
Verapamil	27. ↑ O2 supply via ↓ in vasospasm Txt Prinzmetal's variant angina
Aspirin	28. Prevents arterial platelet adhesion (not DVThrombi). Inactivates COX= ↓ platelet production of TxA2, a potent vasoconstictor

Warfarin	29. (-)Vit. K dependent gamma carboxylation of clotting factors= anticoagulation state
Heparin	30. Dependent on Antithrombin III activation
TPA	31. Binds to fibrin clots & activates plasminogen on the spot. Short t1/2, given IV. 32. Does not discriminate b/t fibrin-based clots= bleeding & stroke complications arise
Streptokinase	33. From bacteria= allergies arise. Can see excess bleeding in post-op pts.
Urokinase	34. Human source. ↑ plasmin. Can see excess bleeding in post-op pts.
Colestipol	35. Bile acid sequestrants. Interrupt bile acid reabsorption= ↑↑ LDL uptake. Cholestyramine same MOA.
Lovastatin	36. HMGCoA reductase(-)= ↑ LDL-r synthesis. Pravastatin/ Mevastatin same MOA.
Losartan	37. ↓ Aldosterone. ↑ Renin 2-3x's
Diazoxide	38. **Txt insulinomas**. Not balanced vasodilator= onlt dilates arterial smooth muscle
Clonidine	39. Central α2(+). ↓ TPR via ↓ symapthetic effect
Methyldopa	40. Central α2(+). (++) Coombs= Hemolytic anemia
Phenytoin	41. ClassIb. Reverses mild AV block due to digitoxin toxicity
Procainamide	42. ClassIa. SLE like syndrome.
Indopamide	43. Only Thiazide that will have no effect on cholesterol levels
Thiazides	44. Older black men w/ HTN due to ↑ Renin.
β(-)	45. Young white men w/o asthma (cause bronchospasm)
ACEIs	46. (-) change AI → AII. (-) Bradykinin inactivation. Captopril/ Enalapril 47. Cause renal failure = use w/ caution in the elderly
Epinephrine	48. ↑ contraction rate & force via β1. 49. ↑ systolic but ↓ diastolic BP. 50. ↓ peripheral resistance via β2 vasodilaiton
Norepi.	51. ↑ heart rate and ↑ systolic and diastolic BP 52. ↑ peripheral blood vessel resistance
Methyldopa	53. DOC for pregnancy induced HTN
Quinidine pre-txt	54. Atrial arrhythmia pretxt w/ a drug that will ↓ ventricular response: Dig.;β(-); Ca Ch.(-)
ClassII	55. β(-) ↓risk fo reinfarction & sudden death following MI
"Gray man"	56. Amiodarone: ClassIII antiarrhythmia
Beperidil	57. Ca Ch(-). Limited clinical use due to Torsades de Pointes
ACEIs	58. Vasodilate renal efferents > than afferent arterioles: ↓GFR & Filtration pressure 59. ↓ Diabetic renal failure progression
Adenosine	60. Its receptor is blocked by Methylxanthines (ie… Theophyline) 61. Favored for the **Txt of Reentrant Supra Ventricular Tachycardia**
Enoxaparin	62. Low molecular weight heparin = Oral anticoagulant
Isoproterenol	63. ↑HR & ↓MAP
Variant angina	64. Use Ca Ch. (-)r ie… Nifedipine
Contraindicated in CHF	65. β (-)r = you don't want to ↓ the heart's pumping strength

CNS

"TOM"	1. Short –acting BDZs: 2. Triazolam 3. Onazelam 4. Midazolam
Butyrophenone	5. Haloperidol & Droperidol
Atypical D4	6. Clozapine – Thioridazine – Olanzepine – Risperidone = Do not cause EPS
Flumazenil	7. BDZ antidote for OD
Methylphenidate	**8. Txt attention deficit disorder**
Phenytoin	9. Causes aplastic anemia/ gingival hyperplasia/ cleft lip & palate
Thiopental	10. Short acting Barb
Carbamazepine	11. **DOC trigeminal neuralgia**. Txt lennox gestaut seizures in kids
Atypical D4-r	12. Thioridazine; Olamzapine; Clozapine
Pimozide	**13. Txt Tourette's**
Risperidone	14. Good for negative symptoms
Thioridazine	15. Most anti cholinergic neuroleptic
Haloperidol	16. Neuroleptic malignant hyperthermia due to chronic D2 block. give Dantrolene and Bromocriptine

Imirpamine	17. Enurisis
Clomirpramine	18. **Txt OCD** See aggressive behavior w/ use
Trazadone	19. Priapism
Bupropion	20. Helps to quit smoking
SSRIs	21. Primarily used for OCD
Fluoxetine	22. Good for negative symptoms
Phenelzine	23. Irreversible MAOI
Lithium	**24. Txt manic phase of Bipolar Disorder** 25. Causes goiter by (-) conversion of T4 to T3 26. Nephrogenic diabetes insipidus 27. Low salt diet will lead to Li toxicity
Alprazolam	**28. DOC stage fright**
Propranolol	29. Social phobia
κ-r	30. Spinal analgesia. Euphoria. ++euphoria. ++sedation. Constipation.
μ-r	31. Supraspinal analgesia. Dysphoria. +respiratory depression. +sedation.
Morphine & O_2	32. Admin. is contraindicated to pts on morphine sedation= ↓ CO_2 sensitivity and O_2 admin. can stop breathing.
Morphine	33. ↑ ICP = do not give to pt. with head trauma
Morphine OD	34. 1.pinpoint pupils 2.↓'d respiraiton 3.coma
Meperidine	35. Anesthetic used during labor
Hydromorphone	36. μ(+) used in renal failure
Tramadol	37. Ambulatory txt for mod. to severe pain
Naloxone	38. **Txt opioid OD**. Reverses respiratory depression
Pentazocine	39. Part κ(+) & part μ(-)
Butorphenol	40. Part κ(+) & part μ(-)
Nalbuphene	41. Part κ(+) & part μ(-)
↓ GABA	42. ↓ seizure focus= Barbs & BDZs
↓ Fast Na Ch.	43. ↓ electrical activity spread = Phenytoin & Carbamazepine
Methoxyflurane	44. Can be nephrotoxic. Needs low MAC for anesthetic induction.
Enflurane	45. Can cause tonic/clonic muscle spasms
Isoflurane	46. Can cause bronchospasm
Halothane	47. Can cause ventricular extrasystoles & Malignant hyperthermia & Hepatitis
Nitric Oxide	48. No effect on HR. Needs high MAC for anesthetic induction.
Thiopental	49. Short acting Barb.
Kentamine	50. Dissociative anesthetic
Droperidol	51. Can be used in combo w/ Fentanyl for neuroleptoanalgesic effect 52. Neuroleptic tranquilizer. Has mild alpha block
Fentanyl	53. Can be used on combo w/ Droperidol for neuroleptoanalgesic effect 54. Used transdermally for chronic pain
Midazolam	55. Pre anesthetic. Induces amnesia
Primidone	56. Biotransformed to Phenobarb.
C & A delta Fibers	57. First fibers to be blocked w/ anesthesia
Esters	58. Procaine, Tetracaine, Benzocaine 59. Broken down and make PABA (allergen)
Amides	60. Lidocaine, Mepivaciane, Bupivaciane, Etidocaine= "i" before "caine" always an amide 61. Metabolized in the liver
Amphetamine	62. DA reuptake (-)'r. MAOI. Parkinson's txt
Bromocriptine	63. D2(+). Used w/ L-Dopa for "on-off" phenomenon of Parkinson's
Benztropine	64. Ant M w/ some DA reuptake (-). Parkinson's txt
Amantidine	65. ↓ DA reuptake. Can cause livido reticularis= skin mottling.
Diphenhydramine	**66. Txt early Parkinson's stages**
Pergolide	67. > Effective & longer acting than Bromocriptine
Ethosuximide	**68. DOC for Absence seizures**
Tranylcypromine	69. MAOI = antidepressant
SSRI & MAOI	70. Fatal combo, especially seen with the use of Paroxetine or Fluoxetine (SSRIs) and Tranylcypromine (MAOI)
Labor opioids	71. Meperidine & Nalbuphine

Desipramine causes	72. Sudden cardaic death in children

Anti-Infective

Primaquine	**4. Malaria profylaxis** 5. Used for extraerythrocytic forms Plasmodium vivax or P. ovale
Ciporfloxacin	6. Quinolone derivative
Sulfonamides	7. PABA structural analogs 8. Inhibit Folic acid synthesis
Tertacyclines, anuria & the exception	9. Should not be used in anuric pt due to production of (-) Nitrogen balance & ↑d BUN levels. 10. Doxycycline is the exception
Ceftriazone	11. 3rd generation cephalosporin 12. **DOC for bacterial meningitis in kids** (ie… HiB) 13. One dose txt of gonorrhea
Hepatic coma DOC	14. Neomycin (aminoglycoside) – it supresses the normal flora = ↓g NH4 production = ↓g free nitrogen levels in the bloodstream.
Clavulanic acid	15. Irreversible (-)r of β lactamases, but ot of transpeptidase = use w/ a β lactamase sensitive penicillin
Piperacillin	**16. Txt Pseudomonas aeruginosa & Klebsiella** 17. Broad spectrum antibiotic
Streptomycin (aminoglycoside)	**18. Txt Mycobacterium tuberculosis**
Isoniazid	19. Most commonly used drug for TB. 20. Usually combined w/ Rifampin and/or Ethambutol 21. **Pre Txt w/ Pyridoxine (Vit B6)** can prevent peripheral neuritis'
Pyrantel Pamoate	**22. Txt of Hookworm disease** 23. Depolarizing NMJ (-)r
Buy "AT" 30, "CELL" at 50	24. A = Aminoglycosides 25. T = Tetracyclines 26. C = Chloramphenicol 27. E = Erythromycin (macrolide) 28. L = Clindamycin 29. L = Lincomycin
Cefoxitin	30. **Txt intraabdominal infections** (ie… w/ Bacteroides fragilis) 31. Traditional txt has been Clindamycin & Gentamycin
Chloramphenicol	32. Broad spectrum antibiotic 33. Bone marrow depression (common) – Aplastic anemia (rare) 34. Gray baby syndrome (chloramphenicol cannot be conjugated) 35. **DOC Typhoid Fever** (symptomatic Salmonella infection) 36. **DOC HiB meningitis in kids** – especially resistant strain to ampicillin
Nifurtimox	**37. Txt trypanosomiasis**
Metronidazole	**38. Txt Leishmaniasis & Amebiasis** 39. Good for anaerobic bacteria = Bacteroides fragilis **40. DOC Trichomoniasis** **41. DOC Giardia lamblia**
Txt P. carinii	42. TMP-SMX & Pentamidine
Tetracycline	43. Txt of Brucellosis & Cholera 44. Txt Rocky Mountain Spotted Fever 45. Txt spirochete infections = Lyme disease (Borrelia burgdorferi)
TMP-SMX	46. (-) dihydrofolate reductase activity
Benzathine Penicillin G	47. Long duration of action = given once every 3-4 weeks for Txt of Syphilis
Praziquantel	48. Txt Schistosomiasis (trematode [fluke] infections)
Melarsoprol	49. Txt Trypanosomiasis that has neurological symptoms
Stibogluconate	50. Txt Leishmaniasis
Fluconazole	51. Txt fungal encephalitis
Amphotericin B	52. Polyene antifingal
Ketoconazole MOA	53. (-) fungal ergosterol synthesis = disrupts membrane
Griseofulvin MOA	54. Accumulates in keratinized layers of the skin = used in dermatomycoses infections
Mefloquine	55. Anti malarial 56. Txt Chloroquine resistant strains = P. falciparum
Chloroquine	57. Txt for Malaria when inside RBC

Nifurtimox	58. DOC Chagas disease due to Trypanosoma cruzi
Erythromycin	59. Used in pts allergic to penicillins
Nystatin	60. Topical txt of superficial mycotic infections = Candidiasis
Acyclovir	61. Guanine analog 62. Txt Herpes infections
Imipenem	63. Used w/ Cilastatin 64. Can cause seizures
Cefoperazone side effects	65. Bleeding due to vit K level alterations 66. Contraindicated in pts w/ bleeding disorders
Vancomycin	67. Used for MRSS (methicillin resistant Staph. Aureus) 68. "Red neck": due to histamine release causes facial flushing
Meropenem	69. used w/ Cilastatin 70. Does not cause seizures (cf w/ Imipenem)
Nafcillin	71. Only penicillin that does not need dose adjustment in renal impairment
Peripheral neuropathy	72. Seen w/ use of: 73. Metronidazole – Isoniazid – Vincristine – ddI – AZT – Allopurinol
Sulfonamides & newborns	74. Kernicterus can occur
"O.N.E." for gonorrhea	75. Fluoroquinolones used in a one dose deal for gonorrhea: 76. O = Ofloxacin 77. N = Norfloxacin 78. E = Enoxacin
Ribavirin	79. Txt RSV (Respiratory Syncytial Virus)

Anti-Neoplastics

Cyclosporine	80. Protects against rejections from organ transplants 81. Does not induce bone marrow depression
Cyclophosphamide	82. Alkylating agent of both purine & pyrimidine bases of DNA 83. Txt CLL
Cisplatin's toxicities	84. Nephro- & Ototoxicity
Methotrexate	85. Antimetabolite of folic acid: (-)dihydrofolate reductase
Leucovorin Rescue	86. Can block/reduce Methotrexate = ↑ folic acid via a reduced folate
Bleomycin toxicities	87. Pneumonitis & pulmonary fibrosis
Azathiorine	88. Used in organ transplantation = kidney allografts 89. Allopurinol can ↑ its activity by (-) its biotransformation to xanthine oxidase
MOPP	90. Chemotherapy used in the txt of Hodgkin's disease 91. M = Mechlorethamine – nitrogen mustard 92. O = Oncovin (Vincristine) – prevents microtubule assembly 93. P = Procarbazine 94. P = Prednisone – glucocorticoid, inducing apoptosis
Tamoxifen	95. (-) estrogen receptor 96. Txt of breast tumors, can see associated endometrial CA
Flutamide	97. Antiandrogenic 98. Used w/ Leuprolide (LH-RH analog) 99. Txt prostatic CA
Megestrol	100. (-) progesterone receptor 101. Txt endometrial CA
Fluoxymesterone	102. Androgenic steroid 103. Txt mammary CA in postmenopausal women
Methotrexate	104. Folic acid analog that (-) tetrahydrofolate synthesis by (-) dihydrofolate reductase 105. Txt of ALL 106. Txt of Psoriasis
Brain tumor Txt	107. Lomustine 108. Carmustine – Causes pulmonary fibrosis
Streptozocin	109. Attaches to β cells 110. Txt of pancreatic insulinomas
Cytarabine (AraC)	111. Pyrimidine analog 112. DOC for AML
Dactinomycin	113. Used for Wilms tumor & rhabdomyosarcoma
Etoposide	114. Used for oat cell CA
Paclitaxel	115. Used for ovarian CA

Amifostine	116. Can ↓ nephrotoxicity due to chronic use of Cisplatin

Pathology

Mobitz I	117. Usually due to inferior MI. Rarely goes into 3rd degree block. 118. Txt w/ Atropine or Isoproterenol.
Mobitz II	119. BBB association. Often goes to 3rd degree AV block. Usually due to anterior MI.
P wave	120. Atrial depol.
a wave	121. LA contraction
T wave	122. Vetricular repol.
Wavy fibers	123. Eosinophilic bands of necrotic myocytes. Early sign of MI.
Janeway's lesions	124. Acute bacterial endocarditis. 125. Nontender, erythematous lesions of palms & soles.
Osler's nodes	126. Subacute bacterial endocarditis. 127. Tender lesions of fingers & toes.
Thiamine defcy	128. Wet Beri Beri heart. Dilated (congested) cardiomyopathy due to chronic alcohol consumption 129. Dyr Beri Beri = peripheral neuropathy 130. Wernicke-Korsakoff = ataxia; confusion; confabulation; memory loss
Fibrinous Pericarditis	131. Associated w/ MI: Dressler's
Serous Pericarditis	132. Associated w/ nonbacterial; viral (Coxsackie) infection; immunologic reaction.
Friction Rub	133. Pericarditis association
Hemorrhagic Pericarditis	134. Associated w/ TB or neoplasm
Restrictive Cardiomyopathy	135. Aka infiltrative cardiomyopathy that stiffens the heart 136. Due to amyloidosis in the elderly 137. Due to , also see schaumann & asteroid bodies in young (<25 yoa).
PML's infectious agent	138. JC Virus (Papovavirus = dsDNA, naked icosahedral capsid)
Edema	139. ↑Pc (more seeps out) 140. ↓πc (less reabsorbed) 141. ↑ permeability 142. Block lymphatic drainage
Adult Polycystic Kidney Disease	143. Commonly see liver cysts & Berry aneurysms along w/ kidney cysts. Hematuria & HTN also present. 144. 3 cysts in ea. Kidney w/ + family history confirms diagnosis
Malignant HTN & Kidneys	145. Petehial hemorrhages are seen on kidney surfaces = Flea-Bitten surface = young black men
Nephritic signs	146. Hematuria; RBC casts; HTN
Nephrotic signs	147. Proteinuria; Hypoalbuminemia; Edema
Podocyte Effacement seen w/	148. Minimal Change (Lipoid nephrosis) disease
ASO seen in	149. Acute post-streptococcal GN (due to βHGASrtep) 150. Anti streptolysin O
Crescentic GN	151. Rapidly progressive GN – nephritic syndrome 152. Associated w/ multi system disease or post-strep/post infectious glomerular nephritis
Hereditary Nephritis	153. Alport's syndrome. X linked 154. Renal disease w/ deafness & ocualr abnormalities
Membranoproliferative GN	155. Can be secondary to complement deficiency; chronic infections; CLL 156. See tram tracking
TypeI Membrano Proliferative GN deposits	157. C3 & IgG deposits
TypeII Membrano Proliferative GN deposits	158. Only C3 deposits 159. Aka Dense deposit disease
Focal segmental glomerulosclerosis deposits	160. IgM & C3 deposits
Cold agglutinins	161. Seen in atypical pneumonia 162. It is IgM Ab with specificity for I Ag on adult RBCs
Scrofula	163. TB in the lymph nodes
Aspirin-Asthma Triad	164. Nasal polyps – Rhinitis – bronchoconstriction
Ferruginous bodies	165. Hemosiderin (pigment w/ Fe^{3-}) covered macrophages that have been pahgocytised
Pancoast's tumor causes	166. Ulnar nerve pain & Horner's syndrome

Fatty degeneration	167. Made up primarily of triglycerides 168. Most commonly due to alcoholism which commonly leads to hepatic cirrhosis 169. Associated w/ CCl_4^-
Cloudy swelling	170. Failure of cellular Na pump 171. Seen in Fatty degeneration of the liver and in Hydropic (Vacuolar) degeneration of the liver
Hydropic degeneration	172. Severe form of cloudy swelling 173. Seen with hypokalemia induced by vomitting/diarrhea
Liquefaction necrosis	174. Rapid enzymatic break down of lipids 175. Seen commonly in Brain & Spinal cord (CNS) injuries 176. Seen in suppurative infections = pus formation
Coagulation necrosis	177. Result of sudden ischemia 178. Seen in organs w/ end arteries limited collateral circulation) = heart, lung, kidney, spleen
Caseation necrosis	179. Combination of both coagulation & liquefaction necrosis 180. Seen w/ M. tuberculosis & Histoplasma capsulatum infection
Fibrinoid necrosis	181. Seen in the walls of small arteries 182. Associated w/ malignant hypertension, polyarteritis nodosa, immune mediated vasculitis
Fat necrosis	183. Result of lipase actions liberated from pancreatic enzymes 184. Seen w/ Acute pancreatitis = saponification results
Hemoptysis	185. Blood in sputum
Pulmonary embolism	186. Most commonly thrombus from lower extremity vein
Phlebothrombosis	187. From a vein of lower extremities, of a pregnant uterus, in Congestive heart failure, bed ridden pt, 188. As a complicaiton in a pt w/ Pancreatic CA due to ↑d blood coagulability
Saddle embolus	189. Embolus lodged in bifurcation of pulmonary trunks 190. ↑↑ RV strain = RV & RA dilate = Acute cor Pulmonale
Paradoxical embolism	191. Right to Left shunt allows a venous embolism to enter arterial circulation 192. Patent ovale foramen or Atrial septal defect
Tuberculoid granuloma	193. Collection of macrophages w/o caseation 194. Seen w/ Sarcoidosis (non-caseating); Syphilis; Brucellosis and Leprotic infections
Cellulitis	195. Spreading infection due to streptococcus
PSA	196. Prostate Specific Antigen = elevated in prostatic CA
↑↑5-HT	197. In cases of metastatic carcinoid, txt w/ Methysergide (5HT antagonist)
↑ αFeto Protein	198. Hepatocarcinoma 199. Neural tube defects
CEA	200. Carcinoembryonic Antigen = elevated in Colon CA
Chromosome 13	201. Retinoblastoma
Chromosome 11p	202. Wilms tumor of the kidney
Vinyl Chloride	203. Associated w/ Angiosarcoma of the liver
Agent Orange	204. Contains dioxin 205. Implicated as a cause of Hodgkin;s disease, non-Hodgkin's lymphoma & soft tissue sarcomas
Parasites & CA	206. Schistosoma haematobium = Urinary bladder CA 207. S. mansoni = Colon CA 208. Aspergillus flavus = potent hepatocarcinogen
Ochronosis	209. Alkaptonuria 210. Error in tyrosine metabolism due to Homogentisic acid (oxidizes tyrosine) 211. Involving intervertebral disks = Ankylosing Spondilitis = Poker spine 212. See dark urine; dark coloration of sclera, tendons, cartilage
Lead poisoning	213. Acid fast inclusion bodies 214. ↑ urinary coproprophyrin 215. Anemia: microcytic/ hypochromic 216. Stippling of the basophils 217. Gingival line & lead line in bones: x-ray 218. Mental retardation
Heroin OD, clinically	219. Massive pulmonary edema w/ frothy fluid from the nostrils
Fetal alcohol syndrome	220. Small head, small eyes, funnel chest, ASD, mental deficiency, and hirsutism
Atypical mycobacterium	221. M. kanasasii & M. avium intracellulare
Cold abscesses	222. Liquefied TB lesions similar to pyogenic abscesses but lacking acute inflammation
Actinomyces isrealli	223. Farmers infection 224. Lumpy jaw (from chewing grain) & PID (IUD), but most common is due to saprophyticus
Congenital Syphilis	225. Saddle nose, Saber shin, Hutchinson's teeth, nerve deafness, interstitial keratitis
Warthin-Finkeledy cells	226. Reticuloendothelial giant cells on tonsils, lymph nodes, spleen

	227. Seen with Rubeola (measles) due to paramyxovirus
Diphyllobothrium latum	228. Tapeworm infection causing megaloblastic anemia by consuming large amount of vit B12 in the host
Subacute Bacterial Endocarditis	229. α Hemolytic Streptococci (S. viridans) = usually in pt w/ pre-existing heart problem
Acute Bacterial Endocarditis	230. Staph aureus, β Hemolytic Streptococci, E. coli 231. Common among drug addicts & diabetics
Mitral Insufficiency	232. Ruptured papillary muscle
Left Anterior Descending branch	233. Branch of the Left Coronary artery 234. Highest frequency of thrombotic occlusion 235. MI = anterior wall of the LV, especially in apical part of interventricular septum
Left Circumflex branch	236. Branch of the Left Coronary artery 237. Occlusion = MI of posterior/lateral wall of the LV
Dissecting Aneurysm	238. False aneurysm: it is splitting of the media of the aorta 239. Usually accompanied w/ long history of severe hypertension, also seen w/ familial hyperlipidemia, atherosclerotic disease, Marfan's Collagen disease 240. Zones of medial necrosis +/- slitlike cysts = Medial Cystic Necrosis of Erdheim
Cor Pulmonale	241. Right ventricular strain, associated w/ right ventricular hypertrophy
Acute Cor Pulmonale	242. Sudden right ventricular strain due to a massive pulmonary embolism
Bronchopneumonia	243. Lobular (rather than lobar) 244. Due to Staph aureus; Pseudomonas aeruginosa; Klebsiella; E. coli 245. Abscess formation is common
Lobar pneumonia	246. Due to Strep. Pneumoniae infection (5% due to Klebsiella) 247. Red Hepatization: days 1-3 of the pneumonia 248. Gray Hepatization: days 3-8 of untreated pneumonia 249. Complicaitons: pleural effusion; atelectasia; fibrinous pleuritis; empyema; fibrinous pericarditis; otitis media
Bronchiectasis	250. Permanent dilatation of the bronchi – predisposed by chronic sinusitis and post nasal drip 251. Supparation associated 252. Lower lobe > than upper lobe involvement
Cold Agglutinins	253. Found w/ Mycoplasma pneumoniae
Panlobular Emphysema	254. α1 – antitrypsin deficiency, causing elastase $\uparrow$ = $\uparrow$ compliance in the lung
Bulla	255. Associated w/ Emphysema = "Bleb" = outpouching - If it ruptures causes Pneumothorax
Farmer's Lung	256. Due to Micropolyspora faeni (thermophilic actinomycetes)
Bagassosis	257. Due to M. vulgaris (actinomycetes) 258. Inhalation of sugar cane dust
Silo-Filler's Lung	259. Due to Nitrogen dioxide from nitrates in corn
G6PDH Deficiency	260. Sex-linked chronic hemolytic anemia w/o challenge or after eating fava beans 261. Heinz Bodies appear in RBCs
HbF $\uparrow\uparrow$	262. Sickle Cell Anemia
Multiple Myeloma	263. Lytic lesions of flat bones ("salt & pepper lesions") = vertebrae, ribs, skull; Hypercalcemia; Bence-Jones protein casts
Hodgkin's Disease	264. Malignant neoplasm of the lymph nodes causing pruritis; fever = looks like an acute infection 265. Reed Sternberg cells
Polyarteritis Nodosa	266. Immune complex disease of Ag-Ab complexes on blood vessel wall 267. Half of the immune complexes have Hepatitis B Ag 268. Can see fever; abd.pain; $\downarrow$ wt; HTN; muscle aches
Sprue	269. Celiac disease due to a gluten-induced enteropathy = small intestine villi are blunted 270. High titers of anti-gliadin Abs & $\uparrow$ IgA levels
Regional Enteritis	271. Crohn's Disease 272. Association w/ Arthritis; Uveitis; Erythema Nodosum
Whipple's Disease	273. Intestinal Lipodystrophy = malabsorption syndrome
Kulchitsky cells	274. Neural cest cells from which carcinoids arise = of the Bronchi; GIT; Pancreas
Ulcerative Colitis	275. Inflammatory disease of the colon w/ $\uparrow$ colon CA incidence 276. Crypt abscess in the crypts of Lieberkuhn 277. Pseudopolyps when ulcers are deep 278. Not transmural involvement
Vaginal Adenosis	279. Women exposed to DES (Diethylstilbesterol) in utero before the 18th week of pregnancy 280. Some develop clear cell adenocarcinoma of the vagina & cervix
Scirrhous Carcinoma	281. Infiltrating Duct Carcinoma w/ fibrosis – most common type of breast carcinoma
Hofbauer Cells	282. Lipid laden macrophages seen in villi of Erythroblastosis Fetalis

Retinopathy of Prematurity	283. Retrolental Fibroplasia = cause of bindness in premies due to high O2 concentrations
IgA deficiency	284. Pt has recurrent infections & diarrhea w/ ↑ respiratory tract allergy & autoimmune diseases 285. If given blood w/ IgA = develop severe, fatal anaphylaxis reaction
Priamry Sjorgen's	286. Dry eyes & dry mouth, arthritis. ↑ risk for B cell lymphoma. HLA-DR3 frequent. Autoimmune disease.
Secondary Sjorgen's	287. Rheumatoid arthritis, SLE, or systemic sclerosis association 288. RA association shows HLA-DR4
LDH1 & LDH2	289. Myocardium. LDH1 higher than LDH2 = Myocardial Infarction
LDH3	290. Lung tissue
LDH4 & LDH5	291. Liver cells
Keratomalacia	292. Severe Vit A deficiency. See Bitot's spots in the eyes = gray plaques = thickened, keratinized ET
Metabisfite Test	293. Suspending RBCs in a low O2 content solution 294. Can detect Hemoglobin S, which sickles in low O2
Microangiopathic Hemolytic Anemia	295. Can be due to Hemolyitc Uremic Syndrome & Thrombotic Thrombocytopenic Purpura (TTP) 296. See Helmet cells
Wright's stain	297. Stain for Burkitt's lymphoma
Mononucleosis	298. Due to EBV infeciton 299. If Mono is treated w/ Ampicillin, thinking that it is a strep pharyngitis, a rash will occur.
T(8;14)	300. Burkitt's lymphoma = c-myc oncogene overexpression
T(9;22)	301. CML = c-abl/bcr gene formation = Philadelphia translocation
Langerhan Cell Histiocytosis	302. Letter Siwe syndrome; Hand Schuller Christian Disease; Eosinophilic Granuloma 303. Birbeck granules are present = tennis racket shape
Myeloid Metaplasia	304. Alkaline phosphatase ↑/normal compare to CML = low to absent 305. Anemia; splenomegaly; platelets > 1 million = extensive extra-medullary hematopoiesis
Multiple Myeloma	306. Weakness; wt. loss; recurrent infection; proteinuria; anemia; ↑ proliferation of plasma cells in BM = plasma cell dx 307. Serum M protein spike – most often of IgG or IgA 308. Hypercalcemia (↑ bone destruction)
T(14;18)	309. NH Lymphoma = bcl2 proto-oncogene overexpression seen w/ *Small Cleaved Cell (Follicualr) Lymphoma*
Focal Segmental GN exs	310. IgA Focal GN = Berger's disease; SLE; PAN; Schonlein-Henoch purpura (anaphylactoid purpura)
Nephrotic Syndrome exs	311. Focal (Segmental) GN; Membranous GN; Lipoid (Minimal Change) GN; Membranoproliferative GN; Hep B; Syphilis; Penicillamine
Schistosoma Haematobium	312. Infection is assocaited w/ Squamous cell CA of the Bladder (most common Bladder CA is transitional cell type) 313. Associated w/ portal HTN due to intrahepatic obstruction
Penicillin Resistant PID	314. PID is usually due to N. Gonorrhoeae, but if unresponsive to penicillin think of Bacteroides species
Duret Hemorrhages	315. Severe ↑ in ICP w/ downward diplacement of cerebellar tonsils into Foramen Magnum causing a compression on the brainstem w/ hemorrhaging into the pons & midbrain 316. Nearly always associated w/ death due to damage to the vital centers in these areas
Hypertensive Hemorrhage	317. Predilection for lenticulostriate arteries = putamen & internal capsule hemorrhages
Cerebral Embolism from	318. MI w/ Mural Thrombi; Atrial Fib Thrombi = Marantic thrombi; L-sided Bacterial Endocarditis; Paradoxical Embolism of septal defect
Neurosyphilis	319. Tabes Dorsalis = ↓ joint position sensation, ↓ pain sensation, ataxia, Argyl Robertson pupils 320. Syphilitic meningitis 321. Paretic neurosyphilis
5p-	322. Cri di Chat: mental retardation; small head; wide set eyes; low set ears; cat-like cry
Trisomy 13	323. Patau's: small head & eyes; cleft lip & palate; many fingers
Acute Cold Agglutinaiton	324. Abs to I blood group Ag. Mediated by IgM Abs 325. Complication of EBV or Mycoplasma pneumoniae infections
Chronic Cold Agglutinaiton	326. Associated w/lymphoid neoplasms. See agglutination & hemolysis in tissue exposed to cold. IgM Abs
RBC Osmotic Fragility	327. Hereditary Spherocytosis
Non-Hodgkin's Lymphomas	328. Small Lymphocytic: low grade B cell lymphoma of the elderly. Related to CLL. 329. Small Cleaved cell (Follicualr): low grade B cell lymphoma of the elderly. T(14;18) bcl-2 oncogene 330. Large Cell 331. Lymphoblastic: high grade T cell lymphoma of kids progressing to T-ALL 332. **Small Non Cleaved** = Burkitt's: high grade B cell lymphoma. EBV infection. *Starry sky* histo appearance. T(8;14) c-myc proto-oncogene. Related to B-ALL
Singer's Nodules	333. Benign laryngeal polyps associated w/ smoking & overuse of the voice
Paraseptal emphysema	334. Associated w/ blebs (large subpleural bullae) that can rupture and cause pneumothorax

Superior Vena Cava Syndrome	335. Obstructed due to bronchogenic carcinoma. Causing swollen face & cyanosis.
Betel nuts	336. Associated to oral cancer.
Fundal (Type A) Gastritis	337. Antibodies to parietal cells; pernicious anemia; autoimmune diseases
Antral (Type B) Gastritis	338. Associated w/ Helicobacter (Campylobacter) pylori infection. 90% of duodenal ulcer
Primary Biliary Cirrhosis	339. Autoimmune origin; middle aged women; anti-mitochondrial Abs 340. Jaundice; itching; hypercholesterolemia (can see cutaneous xanthomas)
Acute Pancreatitis	341. ↑ pancreatic enzymes = fat necrosis; sapponification = hypocalcemia; ↑ serum amylase 342. Severe epigastric ab pain; prostration; radiation to the back
Radiating Back Pain	343. Chronic pancreatitis
Complete Hydatidiform Mole	344. No embryo. Paternal derivation only. 46XX
Partial Hydatidiform Mole	345. Embryo. 2 or more sprems fertilized 1 ovum: triploidy/tetraploidy occurs
Cold Nodules	346. Hypoplastic Goiter nodules that do not take up radio active iodine. [Opposite: hot & do take up iodine]
Acidophils	347. Mammotrophs = Prolactin 348. Somatotrophs = GH
Basophils	349. Thyrotrophs = TSH 350. Gonadotrophs = LH 351. Corticotrophs = ACTH & FSH
Lacunar Strokes	352. Small/focal aa occlusions. Purely motor or sensory. 353. Sensory: lesion of thalamus 354. Motor: lesion of internal capsule
CSF of Bacterial Meningitis	355. ↓ Glucose; ↑ Protein; ↑ Neutrophils; ↑ Pressure
CSF of Viral Meningitis	356. Normal Glucose; +/-↑ Protein; ↑ Lymphocytes
Marble Bone Disease	357. Osteoporosis: Albers-Schonberd Disease = inspite of ↑d bone density, many fractures = ↓ osteoclasts
C5a	358. Involved in Chemotaxis (for Neutrophils)
C3b	359. Involved in Opsonization (& IgG)
Anaphylotoxins	360. C3a & C5a (mediate Histamine release from Basophils & Mast cells)
Vasoactive Mediators	361. Vasoconstriction: TxA2; LTC_4; LTD_4; LTE_4; **PAF** 362. Vasodilation: PGI_2; PGD_2; PGE_2; $PGF_{2\alpha}$; Bradykinin; **PAF** 363. ↑d Vascular Permeability: Hist.; 5HT; PGD_2; PGE_2; $PGF_{2\alpha}$; LTC_4; LTD_4; LTE_4; Bradykinin; **PAF**
Platelet Aggregation	364. ADP; Thrombin; TxA2; collagen; Epinephrine; PAF
Platelet Antagonist	365. Prostacyclin (PGI_2)
Intrinsic Pathway	366. F XII (Hagman): APTT
Extrinsic Pathway	367. F VII: PT
Lines of Zahn	368. Aterial thrombi = pale red colored (dark red is venous thrombi)
Currant Jelly appearance	369. Post mortem clots
Emigration: Chemotaxis	370. Margination 371. Pavementing 372. Adhesion 373. Chemotaxis 374. Phagocytosis 375. Intracellular microbial killing
Transudate	376. Specific gravity < 1.012 – low protein
Exudate	377. Specific gravity > 1.020 – high protein
Hurler's	378. Lysosomal storage disease α L Iduronidase – Heparan/Dermatan Sulfate accumulation
Galactosemia	379. Deficiency of Galactose 1 Phosphate Uridyl Transferase. ↑ Galactose 1 Phosphate
Phenylketonuria	380. Deficiency: Phenylalanine Hydroxylase. ↑ Phenyalanine & degradation products 381. Mousy body odor
Autosomal Dominant Diseases	382. Adult Poly Cystic Kidney Disease 383. Familial Hypercholestrolemia Disease 384. Hereditary Hemorrhagic Telengectasia (Osler-Weber-Rendu) 385. Hereditary Spherocytosis 386. Huntington's Disease (chromosome 4p) 387. Marfan's Syndrome 388. Neurofibromatosis (von Recklinghausen's) 389. Tuberous Sclerosis 390. Von Hippel Lindau Disease
Autosomal Recessive Diseases	391. Tay-Sachs 392. Gaucher's

	393. Niemann-Pick 394. Hurler's 395. Von Gierke's 396. Pompe's 397. Cori's 398. McArdle's 399. Galactosemia 400. PKU 401. Alcaptonuria
X Linked Recessive Diseases	402. Hunter's Syndrome (L-Iduronosulfate Sulfatase deficincy, ↑ Heparan/Dermatan Sulfate) 403. Fabry's Disease (α Galactosidase A deficiency, ↑ Ceremide Trihexoside) 404. Classic Hemophilia A (Factor VIII deficiency, F8 Gene on X chromosome is bad, ↑ Ceremide Trihexoside) 405. Lisch-Nyhan Syndrome (HGPRT deficiency, ↑ Uric acid) 406. G6Phosphatase deficiency (G6PDH deficiency, ↑ Ceremide trihexoside) 407. Duchenne's Muscular Dystrophy (Dystrophin deficinecy, ↑ Ceremide Trihexoside)
Hypersensitivity Reactions "ACID"	408. **Type I** (Anaphylactic): IgE mediated. Exs: Hay Fever; Allergic asthma; Hives 409. **Type II** (Cytotoxic): Warm Ab autoimmune hemolytic anemia; hemolytic transfusion reactions; Erythroblastosis Fetalis; Grave's Disease; Goodpastures 410. **Type III** (Immune Complex): Insoluble complement bound aggregates of Ag-Ab complexes. Exs: Serum sickness; Arthus Reaction; Polyarteritis Nodosa; SLE; Immune Complex Mediated Glomerular Disease 411. **Type IV** (Delayed = Cell mediated immunity): Delayed hypersensitivity. Involves memory cells. Exs: Tuberculin reaction; Contact dermatitis; Tumor cell killing; Virally infected cell killing
Transplant Rejections	412. Hyperacute Rejection = occurs w/in minutes of transplant. Ab mediated. 413. Acute Rejection = occurs w/in days to months of transplant. Lymphocytes & macrophages. Only rejection type that can be treated w/ therapy. 414. Chronic Rejection = occurs months to years of transplant. Ab mediates vascular damage.
Blood Metastasis	415. Sarcoma, exception – renal cell CA: early venous invasion
Lymph Metastasis	416. Carcinoma, exception – renal cell CA: early venous invasion
Aflatoxin	417. Seen w/ Aspergillus. ↑ risk for Hepatocellular CA
Cleft Lip	418. Incomplete fusion of maxillary prominence w/ median nasal prominence
Cleft Palate	419. Incomplete fusion of lateral palatine process w/ each other & median nasal prominence & medial palatine prominence
Craniopharyngioma	416. Pituitary tumor - usually calcified
Lateral Geniculate Nucleus	Inolved in Vision relay
Medial Geniculate Body	Involved in Hearing relay
Lung Development	Glandular: 5-17 fetal weeks Canalicular 13-25 fetal weeks Terminal Sac 24 weeks to birth Alveolar period birth-8yoa
Heart's 1st Beat	21-22 days
Foregut	Mouth → Common Bile Duct - supplied by Celiac Artery
Midgut	Duodenum, just below Common Bile Duct → Splenic flexure of the Colon supplied by Superior Mesenteric artery
Hindgut	Splenic Flexure → Butt crack → supplied by Inferior Mesenteric Artery
Hypnagogic Hallucinaitons	Narcolepsy
Type I Error	α: "Convicting the innocent" – accepting experimental hypothesis/rejecting null hypothesis
Subdural Hematoma	Ruptured cerebral bridging veins
Epidural Hematoma	Ruptured middle meningeal artery "intervals of lucidness", 2ry to Temporal bone fracture
Type II Error	β: "Setting the guilty free" – fail to reject the null hypotesis when it was false
Power	1 - β
Sensitivity	TP/TP + FN
Specificity	TN/TN + FP
Positive Predictive Value	TP/TP + FP
Negative Predictive Value	TN/TN + FN
Odds Ratio	ad/bc
d-Dimers	DIC
Delusion	Disorder of thought content
Loose Association	Skip from topic to topic
5 Stages of Death	Denial – Anger – Bargaining – Depression – Acceptance

1st Branchial Arch	Meckel's cartillage – gives rise to incus/malleus bones of ear
2nd Branchial Arch	Reichert's cartillage – gives rise to stapes bone of ear
Median nerve lesion	No pronation
Radial nerve lesion	Wrist drop – seen w/ humerus fracture
Common peroneal lesion	Foot drop. No dorsiflexion or eversion of the foot
Diract inguinal hernia	Goes through superficial inguinal ring. Medial to inferior epigastric artery Seen in older men
Indirect inguinal hernia	Goes through deep & superficial inguinal ring Lateral to inferior epigastric artery Seen in young boys – processus vaginalis did not close
@ Diaphragm T8, T10, T12	T8 = Inferior vena cava T10 = Esophagus/ Vagus T12 = Aorta/ Thoracic duct/ Azygous vein
Hemiballism	Wild flailing of 1 arm. Lesion of the sub thalamic nucleus
O Linked Oligosaccharide	In the Golgi
N Linked Oligosaccharide	In the RER
MLF Syndrome	Internuclear Ophthalmoplegia: medial rectus palsy on lateral gaze; Nystagmus on abducting eye. Seen w/ MS
ADA Deficiency	SCID
Raphe Nucleus	Initiation of sleep via 5HT predominance
β waves	Alert; Awake; Active mind – also seen in REM, therefore we say "paradoxical sleep"
Irreversible Glycolysis Enzymes	Hexokinase PhosphoFructo Kinase = Rate Limiting Step Pyruvate Kinase Pyruvate Dehydrogenase
Irreversible Gluconeogenesis Enzymes	PyruvateCarboxy Kinase PEPCarboxyKinase Fructose 1,6 BiPhosphatase Glucose 6 Phosphatase **muscle dose not take part in Gluconeogenesis, only takes place in the liver, kidney & GI epithelium
Pellagra	Diarrhea, Dermatitis, Dementia Niacin Deficiency (Vit B3 deficiency) Hartnup's Disease Malignant Carcinoid Syndrome INH use
TLCFN	Needed as co-factor for Pyruvate DH complex & α Ketoglutarate DH complex
LCAT or PCAT	Esterification of cholesterol: lecithin cholesterol acetyltransferase Lecithin = Phosphatidylcholine, therefore phosphotidylcholine acetyltransferase
HMGCoA Reductase	Rate limiting step in cholesterol synthesis Changes HMGCoA → Mevalonate (-) by Lovastatin
Ketogenic amino acids	Leucine & Lysine
Glucogenic amino acids	Methionine, Threonine, Valine, Arginine, Histadine
Keto & Gluco amino acids	Phenylalanine, Trytophan, Isoleucine
Carnitine Shuttle	Feeds FA into the mitochondria for their consumption
Cori Cycle	Keeps muscles working anaerobically. Transfers lactate to the liver to make glucose which is sent back into the muscles for energy use
(-) Na^+ Pump (ATPase)	Ouabain [(-) K^+ pump] Vanadate [(-) phosphorylation] Digoxin [↑ heart contractility]
TCA Cycle Products	"**C**itric **A**cid **I**s **K**rebs **S**tarting **S**ubstrate **F**or **M**itochondrial **O**xidation" **C**itrate → **A**conitate → **I**socitrate → α **K**etoglutarate → **S**uccinyl → **S**uccinate → **F**umarate → **M**alate →**OAA**
Cones	Color vision. Contain Iodopsin = Red-Blue-Green specific pigment. For acuity.
Rods	Contain Rhodopsin pigment. High sensitivity. Concentrated in the fovea. Night vision.
Gastrula	Seen @ 3rd week: Ecto, Meso & Endo
Epiblast	@ 2nd week: forms the primitive streak, from which Meso & Endo come from. Directly gives rise to Ecto.
Sydenham's Chorea	Post streptococcal infection. Necrotizing arteritis of the caudate, putamen, thalamus
(+) Frei Test	Chlamydia trachomatis types L1, L2, L3 = Lymphogranuloma venereum

Sabouraud's Agar	Culture for all Fungi ie…Culture Cryptococcus neofromans which is found in pigeon droppings
FMR1 Gene Defect	Fragile X Syndrome: macro-orchidism; long face; large jaw; large everted ears; autism, mental retardation
Barr Body	Present in Kleinfelters: Male: XXY Not present in Turner's: Female: XO
Aortic Insufficiency Signs	Traube Sign = Pistol shot sound over the femoral vessels Corrigan pulse = water hammer pulse over coratid artery = aortic regurgitation
Scleroderma :"CREST"	Calcinosis; Raynauds; Esophageal; Sclerodactyl; Telangiectasis
Cretinism	Sporadic: bad T4 phosphorylation or developmental failure of thyroid formation Endemic: no Iodine in diet: protruding belly & belly button
Hemochromatosis Triad	Micronodular pigment cirrhosis; Bronze Diabetes; Skin pigmentation = due to ↑ Fe^{3+} deposition

Highly Tested Drug Side Effects

Agranulocytosis	420. Clozapine, Chloramphenical
Aplastic Anemia	421. Chloramphenicol 422. NSAIDs 423. Benzene
Atropine-like Side Effects	424. Tricyclics
Cardiotoxicity	425. Doxorubicin 426. Daunorubicin
Cartilage Damage in Children	427. Fluoroquinolones (Ciprofloxacin & Norfloxacin)
Cinchonism	428. Quinidine
Cough	429. ACE Inhibitors
Nephrogenic Diabetes Insipidus	430. Lithium (Txt w/ Amiloride)
Disulfiram-like Effect	431. Metronidazole 432. Sulfonylureas (1st generation)
Extrapyramidal Side Effects	433. Antipsychotics (Thioridazine, Haloperidol, Chlorpromazine)
Fanconi's Syndrome	434. Tetracycline
Fatal Hepatotoxicity (necrosis)	435. Valproic Acid 436. Halothane 437. Acetaminophen
Gingival Hyperplasia	438. Phenytoin
Gray Baby Syndrome	439. Chloramphenicol
Gynecomastia	440. Cimetidine 441. Azoles 442. Spironolactone 443. Digitalis
Hemolytic Anemia in G6PD-deficiency	444. Sulfonamides 445. Isoniazid 446. Aspirin 447. Ibuprofen 448. Primaquine
Hepatitis	449. Isoniazid
Hot Flashes, Flushing	450. Niacin 451. Tamoxifen 452. Ca^{++} Channel Blockers
Induce CP450	453. Barbiturates – Phenobarbital 454. Phenytoin 455. Carbamazepine 456. Rifampin
Inhibit CP450	457. Cimetidine 458. Ketoconazole
Interstitial Nephritis	459. Methicillin 460. NSAIDs (except Aspirin) 461. Furosemide 462. Sulfonamides
Monday Disease	463. Nitroglycerin Industrial exposure → tolerance during week → loss of tolerance during weekend → headache, -ach, dizziness upon re-exposure
Orange Body Fluids	464. Rifampin

Osteoporosis	465. Heparin 466. Corticosteroids
Positive Coombs' Test	467. Methyldopa
Pulmonary Fibrosis	468. Bleomycin 469. Amiodarone
Red Man Syndrome	470. Vancomycin
Severe HTN with Tyramine	471. MAOIs
SLE-like Syndrome	472. Procainamide 473. Hydralazine 474. INH
Tardive Dyskinesia	475. Antipsychotics (Thioridazine, Haloperidol, Chlorpromazine) Clozapine: only antipsychotic to not 476. give you tardive dyskinesia
Tinnitus	477. Aspirin 478. Quinidine

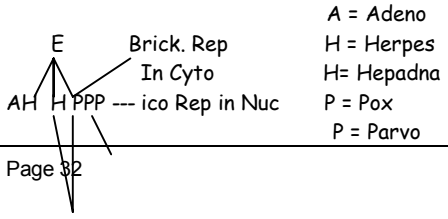
Microbiology

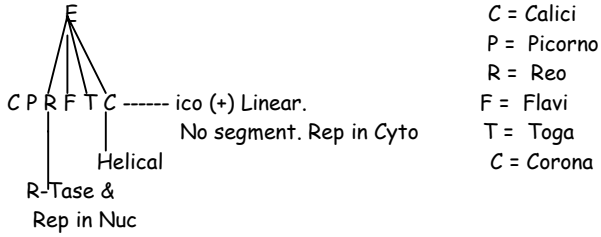
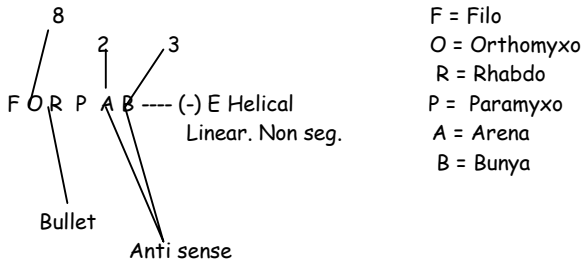
Lactose formers	1. "CEEK" 2. Citrobacter 3. Enterobacter 4. E.Coli (K1 capsule most important) 5. Klebsiella
Non lactose formers	6. "SHYPS" 7. Shigella 8. Yersinia enterolytica (AKA Pestis) 9. Proteus 10. Salmonella Motile: make H2S Non Motile: noH2S
May lack color	11. "These rascals may microscopically lack color": 12. Treponema 13. Ricksetta 14. Mycobacterium 15. Mycoplasma 16. Legionella 17. Chlamydia
↑ cAMP	18. "CAPE" 19. Cholera 20. Anthracis (Poly D glutamate capsule) 21. Pertusis (via Gi) 22. E.coli (LT enterotoxin)
Have Capsules [ie… are Quellung Reaction (+)]	23. "Some killers have pretty nice capsules" 24. Strep. Pneumoniae 25. Klebsiella 26. HiB 27. Pseudamona Aeroginosa 28. Neisseria meningitis 29. Cryptococcus neoformans (only encapsulated fungal pathogen)
Dimorphic Fungi	30. "Can Also Have Both Shapes" 31. Cocciodes 32. Aspergillus 33. Histolpasma 34. Blastomyces 35. Sprothrix schenkii
Have β Prophage	36. "OBED" 37. O = Salmonella 38. B = Botulinum 39. E = Erythrogenic strep 40. D = Diptheria
Spore Forming Bacteria	41. Bacilus & Clostridium (have calcium di-picolinate)
IgA Proteases	42. Neisseria, Haemophilus, S. pneumoniae
Widal Test	43. Salmonella (Salmonella begins in the ileocecal region) agglutination indicates Abs to O, H, Vi Salmunella Ags

Wayson's Stain	44. Yersinia
Pneumonic Plaque Transmission	45. Person to person cf w/ Bubonic plaque that was via infected flea
Splenectomy	46. Predisposes to septicemia
Invasins	47. Yersinia pseudotuberculosis
Fusiform	48. Vincent's trench mouth
S. viridans	49. Dextran mediated adherence
Obligate Aerobes	50. Pseudomonas & Mycobacterium
Obligate Anaerobes	51. Clostridium, Actinomyces, Bacteroides
Staph aureus	52. A Protein, Catalase +/ Coagulase +
Spirochetes	53. Treponema, Borrelia, Leptospira
Non Motile Gram (+) Rods	54. Corenybacterium D & Nocardia
Acid Fast Organisms	55. Mycobacterium; Cryptosporidium; Nocardia (partially); Legionella micdadei; Isospora
Pigment Producing Bacteria	56. Serratia – red (can cause pseudohemoptysis) 57. Pseudomonas A – piocyanin blue/green 58. Staph Aureus – yellow – Protein A 59. Mycobacteria – photo/scoto chromogenic – caritinoid – yellow/orange 60. Corneybacterium D – black/gray – pseudomembrane plaque in throat 61. Bacteroides (Porphyromonas) melaninogenicus – black (heme) 62. E. coli – irredescent green sheen
Bacterial Morphology	63. Pneumococci – lancet shaped diplococci 64. Neisseria – kidney bean shaped diplococci 65. Camphylobacter – gulls' wings/comas 66. Vibrio Cholera – coma shaped 67. Corneybacterium D – club shaped (nonmotile, G+Rod) 68. Yersinia – safety pin seen in Wayson's stain
Inclusion Bodies	69. Rabies – Negri bodies – intracytoplasmic 70. Pox virus – Guarnieri – intracytoplasmic & acidophilic 71. CMV – Owl's eyes – intracytoplasmic & intranuclear 72. HSV – Cowdry bodies – intranuclear
Schistosoma Japonicum Monsoni	73. Intestinal – contact w/ bad water
Schistosoma Haematolium	74. Vesicular – contact w/ bad water
Non Human Schistosom	75. Swimmer's itch – contact w/ bad water
Clonorchichis	76. Chinese liver fluke – eating raw fish. Txt: Praziquantel
Fasciola Hepatica	77. Sheep – eating raw fish. Txt: Praziquantel
Fasciola Biski	78. Giant intestinal flukes – eating raw fish. Txt: Praziquantel
Paragonimus Westermani	79. Lung fluke – eating raw fish. Txt: Praziquantel
Oxidase (+)	80. Neiserria and most Gram (-)s
Micro Aerophilic	81. Camphylobacter & Helicobacter
Urease (+)	82. All Proteus – can cause Staghorn/Struvite calculi (NH_4^- Mg^{2-} stones): alkaline urine 83. Ureaplasma 84. Campylobacter pylori (Helicobacter) 85. Cryptococcus 86. Nocardia
Coagulase (+)	87. Staph A & Yersenia pestis
Obligate Intracellular Bacteria	88. Chlamydia Pistacci (Chlamydia do not make own ATP); Mycobacterium Leprae; all Rickettsia except Roachalimea (make sufficient ATP to survive)
Protozoa	89. Plasmodium; Toxoplasma ghondi; Babesin; Leishmania; Trypanosoma Cruzi
Obligate Non Intracellular Parasites	90. Treponema palidum & Pneumocystis Carinii (cannot be cultured on inert media but can be found extra cellularly in the body)
Haemophilus Factors	91. X = Protoporphyrin & V = NAD
All cocci are	92. Gram (+) except for Neisseria & Moraxella
"Eaton Fried Eggs"	93. Mycoplasma pneumoniae has fried egg colonies on Eaton agar (needs cholesterol)
Mycoplasma	94. No cell wall. Membrane has cholesterol. Smallest living bacteria. 95. P1 protein inhs ciliary action 96. Fried egg colonies 97. Atypical pneumonia – young adults
Sabrands	98. Fungal media
Malassazia furfur	99. Spaghetti & meat ball

Measles' 3C's	100. Cough – Coryza – Conjunctivitis. Can also have photophobia 101. May lead to subacute Sclerosing Panencephalitis
Non Motile Bacilli & Clostridium	102. B. Anthracis & C. Perfringens
Bloody diarrhea agents	103. EIEC – EHEC – Shigella - Yersenia enterocolitica – Entaemeba histolytica – Salmonella – Campylobacter jejuni
YW-135CA	104. N. meningitidis vaccine capsualr polysaccharide strains
Indian Ink	105. Cryptococcus neoformans
Naegleria causes	106. Colonization in the nasal passages after swimming
Need Cysyeine for growth	107. "Ella likes cysteine": 108. Francisella 109. Brucella 110. Legionella 111. Pasturella
Endotoxins, G(+) or G(-)	112. Gram (-): N. meningitidis
Ecthyma Gangrenosum, seen w/	113. Pseudomonas aeroginosa. Target shaped skin lesions w/ a black center and red ring surrounding the lesion
Endospores G(+)	114. Gram (+): Bacillus & Clostridium – made up of dipicolinate & Keratin
Multi Brain Abscess	115. Nocardia
Single Brain Abscess	116. Actinomyces israelli
↑ risk for Strep pneum Infection	117. Asplenic; Sickle cell anemia; immunocompromising illness
α Hemolysis/Optochin Sensitive	118. Strep. Pneumoniae
α Hemolysis/Optochin Resistant	119. Strep. Viridans (Subacute Endocarditis)
Staph. Saprophyticus	120. Novobiocin Resistant (UTIs)
Staph. Epidermidis	121. Novobiocin sensitive (Endocarditis in IVDUs)
β Hemolysis/Bacitracin Sensitive	122. **Strep. Pyogenes** (pharyngitis; Scarlet fever; cellulitis; impetigo; Rheumatic fever)) 123. Hyaluronic capsule; non-motile; M proteins; Endotoxin A
β Hemolysis/Bacitracin Resistant	124. Strep. Agalactiae (Diabetes predisposes to infection)
EFII Ribosylation	125. Diphtheria toxin & Pseudomonas exotoxon A
Bacillus Anthracis: 3 toxins (work via adenylate cyclase)	126. Protective Antigen (PA) 127. Lethal Factor = toxic to macrophages 128. Edema Factor = ↑ cAMP
Woolsorter's Disease	129. Bacillus anthracis. **DOC**: Penicillin
Grows in Rice	130. Bacillus Cereus
Clostridium Perfringens	131. Double Zone β Hemolysis (test) 132. Lecithinase: α toxin = lyses RBCs 133. 80% of gas gangrene (myonecrosis) cases
Clostridium Difficile	134. 2 Toxins: Enterotoxin (Exotoxin A) & Cytotoxin (Exotoxin B) 135. Pseudomembranous colitis (can be precipitated by clindamycin/ampicillin)
Spastic Paralysis toxin	136. Clostridium Tetani toxin
Clostridium Botulinum	137. Bad canned foods have neurotoxin = flaccid paralysis (block Ach release)
Infant Botulinum	138. Floppy Baby Syndrome. Pre formed toxin in honey
Thayer Martin Agar	139. Neisseria ID
DOC for N. gonorrhoeae	140. Ceftriazone
K1 E. Coli Capsular Ag	141. Related w/ neonateal meningitis
The A's of Klebsiella	142. Alcoholics 143. Aspiration pneumonia 144. Abscesses in the lungs
Rice H_2O Diarrhea	145. Vibrio Cholera: metabolic acidosis
Raw seafood intoxicaiton	146. Vibrio parahemolyticus
Helicobacter Txt	147. Bismuth salts; Metronidazole; Tetracycline (or amoxicillin)
↑ risk of P. aeroginosa infection	148. Burn patients & Cystic fibrosis
Contact lens' infection	149. Pseudomonas aeroginosa
Cat Bites	150. Pasteurella multocida
Undulant Fever	151. Brucella
Bordet Gengou Agar	152. Bordetella pertusis ID
Lowenstein-Jensen medium	153. M. tuberculosis ID
Cat Scratch Disease	154. Bartonella henselae. Leion can resemble Kaposi's sarcoma.

	155. Toxoplasmosis
Pink Eye	156. Adenovirus (type 8)
True Hemaphrodite	157. Testes & Ovaries are present
Pseudo Hemaphrodite	158. External genitalia does not coincide w/ gonads
Male Pseudo Hemaphrodite	159. Testicular Feminization
HLA Genes Location	160. 6p
Parvovirus B19	161. Fifth Disease: Erythema Infectiosum (ssDNA). Linked w/ sicle cell anemia
Interferon MOA	162. Inhibits viral replication (translation or transcription)
Acute Hemorrhagic Conjunctivitis	163. Seen w/ infections from Enterovirus & Coxsackie A
Parainfluenza Causes…	164. Croup (Laryngotracheobronchitis)
Swimming Pool Conjunctivitis	165. Adenovirus (types 3 & 4)
RSV	166. Bronchiolitis in infants
Removed tonsils, find what virus	167. In 80%, Adenovirus. In the immunosuppressed, activation can occur
Bone Fever	168. Dengue: Group B Togavirus, from the Arbovirus, transmitted by mosquitos
HbsAg	169. Appears in blood soon after infection, before onset of acute illness 170. Disappears w/in 4-6 months after the start of clinical illness
HbeAg	171. Appears early acute phase, indicates higher risk of transmitting the disease 172. Disappears before HbsAg is gone
Anti-Hbc	173. Present in beginning of clinical illness 174. Seen in the "window phase"
Filamentous Bacteria	175. Actinomycetes = Nocardia; Actinomyces; Streptomyces
Listeria contaminates	176. Milk, cheese, vegetables (coleslaw) in recent infections
Shiga like Toxin	177. E. Coli 0157/H7: Hemorrhagic colitis & Hemorrhagic uremic syndrome
Necrotizing Fasciitis	178. Group A Streptococci
Relapsing Fever	179. Borrelia recurrentis
Loffler's Medium	180. Corneybacterium diphtheriae
Chlamydiae Developmental Cycle	181. Elementary Body: infeccious particle that Enters the cell 182. Reticulate Body: made from elementary body. Replicates, differentiates and releases elementary bodies to infect other cells 183. W/ infection you will see Glycogen containing inclusions 184. Cell wall lacks muramic acid
Trench Fever	185. Rochalimaea quintana
"Spotted Fever" Members	186. Rickettssia rickettsii (RMSF) & R. akari (rickettsial pox) in the U.S. 187. R. sibirica (tick typhus in China) & R. australis (typhus in Australia)
Thrush Txt	188. Nystatin txts candidiasis of the mouth
Rose Bush Thorns	189. Have Sporothrix schenckii
Contact lens solution infection	190. Acanthamoeba
Filiariasis Causant	191. Wucheria bancrofti (infection aka elephantitis & wucheriasis
Freshwater lake infection	192. Causes amebic meningoencephalitis due to Naegleria fowleri
Reduviid bug bite	193. Transmits Trypanoma cruzi (Chagas' disease): Romana's Sign
Schistosoma Haematobium causes	194. Bladder calcificaiton & cancer
Schistosoma Mansoni causes	195. Presinusoidal HTN, splenomagaly, esophageal varices
Snail, intermediate host of…	196. Schistosomiasis
Ixodes scapularis transmits	197. Babesia (clinically rembles malaria) & Borelia burgdorferi
Nantucket Protozoa	198. Babesia microt
Infection by Reduviid Bug	199. Trypansoma cruzi: Chagas' Disease
Infection by TseTse Fly	200. Trypansoma brucei gambiense & rhodiense: African Sleeping Sickness
Infection by Sandfly	201. Leishmaniasis: Mucocutaneous Diseases by L. braziliensis & Visceral Disease by L. donovani & Dermal Leishman by L. tropica, mexicana, peruviana
Infection by Ixodes Tick	202. Babesia microti: Babesiosis **&** Borrelia burgdorferi: Lyme Disease
Infection by Anopheles Mosquito	203. Malaria
Trophozoites w/ "Face-Like" Appearance	204. Giardia lamblia
Nonseptate Hyphae	205. Zygomycosis: Rhizopus & Mucor. Only mycosis w/o septate. Infect Ketoacidotic Diabetics.
Histoplasmosis Geography	206. Ohio, Mississippi, Misouri River valleys
Coocidioidomycosis Geography	207. Southwestern deserts, California
Blastomycosis Geography	208. States east of Mississippi River

Paracoccidioidomycosis Geography	209. Latin America
Roseola Infection, aka	210. Exanthema Subitum: "Sixth Disease" (Human Herpes Virus-6 dsDNA, enveloped)
Herpangina	211. "Hand-Foot-and-Mouth" Disease: Coxsackie A (Picornavirus +ssRNA)
Orthomyxovirus	212. –ssRNA, enveloped virus. 213. Spike Glycoproteins (peplomeres): HA = Hemagluttinin & NA = Neuraminidase. These peplomeres are what give the virus antigenis variation 214. Influenza A & B
Paramyxovirus	215. –RNA, enveloped. Most common cause of respiratory infections in kids 216. Mumps 217. Croup(Parainfluenza virus) 218. Rubeola(Measles virus) 219. RSV
Togavirus	220. +ssRNA, enveloped 221. 3 Day Measles: German Measles: Rubella/ Rubivirus 222. Encephalitis viruses: Alphaviruses: Eastern (more severe) and Western Equine Encephalitis
Flaviviris	223. Dengue Fever – icterus & hemorrhage w/ blac vomit 224. Yellow fever 225. St. Louis Encephalitis – no hepatitis or hemorrhage
Bunyavirus	226. –ssRNA, enveloped 227. California Encephalitis – severe bifrontal headaches 228. Hantavirus – hemorrhagic fever w/ acute resp. distress syndrome
IgA Protease Activity	229. H. Influenzae (needs factors V & X for growth) 230. Strep. Pneumoniae 231. N. meningitidis 232. N. gonnorhoae 233. W/ this activity these bugs are able to colonize the oral mucosa.
Diphtheria: ABCDEFG	234. Adenopathy 235. β Prophage encodes the exotoxin 236. Corneybacteria is Club shaped 237. Diphtheria 238. Elongation Factor II 239. Granules (metachromatic)
Only ssDNA	240. Parvovirus: "Part of a virus"
Only dsRNA	241. Reovirus, "RepeatOvirus"
Naked RNA	242. "Naked for CPR": Calcivirus; Picornovirus; Reovirus
2 circular DNAs	243. Papovavirus & Hepadnavirus
BK	244. Papovavirus. Seen in kidney transplant patients (causes renal disease)
Hepadna, Retrovirus?	245. No, but has reverse transcriptase
Picornovirus: "PERCH"	246. **P**oiliovirus; **E**cho; **R**hino; **C**oxsackie; **H**ep A
Hemorrhagic Fevers	221. Filovirus & Bunyavirus (Hantavirus)
Segmented viruses	All are RNA: Orthomyxo; Arena; Bunya; Reo
Eclipse Phase	No internal virus. 1 total virus per cell
Latent Phase	No external virus. Extracellular virus found
Naked Capsid Virus	Nucleocapsid. DNA or RNA + Structural proteins
Enveloped Virus	Membrane. Nucleocapsid + Glycoprotein
Interferon	Non virus specific. Works by RNA endonuclease = digests viral DNA + inh viral prot synth
AIDS structural prots	Gag, pol, env
AIDS regulatory prots	Tat, rev, nef
AIDS gp41 env prot	Transmembrane
AIDS gp120 env prot	Surface
AIDS p17 gag prot	Matrix
AIDS p24 gag prot	Capsid
AIDS p7p9 gag prot	Nucleocapsid
DNA Viruses	

	SS P = Papova Circ
(+) RNA Viruses	
(-) RNA Viruses	

Hepatitis Window Period	After HbsAg disappears & Before HbsAb appears				
Hepatitis	A	B	C	D	E
	Picorna	Hepadna	Flavi	Delta	Calici

Downey Type II cells	EBV
Infection by Aedes Mosquito	Yellow Fever: Flavivirus: Black vomit, jaundice, high fever
"Hot T-Bone stEAk": ILs	IL1 = ↑ Temp: **HOT** IL2 = stimulate **T** cells IL3 = stimulate **Bone** Marrow stem cells' growth & differentiation (GM CSF) IL4 = stimulate Ig**E** (& IgG) IL5 = stimulate Ig**A** (& eosinophils)
ILs Secreted by CD4s	IL2, IL4, IL5, IFN gamma
ILs Secreted by Macrophages	IL1 & TNF α
C5a	Neutral chemotaxis. When it is w/ C3a, participates in anaphylaxis
C5 Convertase	When both Alternative and Classic pathways come together Alternative: C3b, Bb, C3b + C3a → C5 Classic: 2b, 3b, C3a + C4b → C5
Only Richettssia not Intracellular	Quintana
Plasmodium Life Cycle	Sporozoites: from blood to liver Primary tissue schizont Trophozoites: in RBC Erythrocytic schizont Merozoite: ruptured RBC Gametozyte Zygote: inside the mosquito
Acanthamoeba	Star shaped cysts
Mucor, Rhizopus, Absidia	Nonseptate, filamentous, 90 degree branching, indian in, capsular halos
Cryptococcus Neoformans	Monomorphic
Candida	Yeast normally, pseudo & true hyphae in tissue infections
Aspergillus Fumigatum	45 degree branching point, asoc'd w/ cystic fibrosis & burns pt
Cocciodes	Hyphae in wild. Artroconidia. Arthocondida & Hyphae. Sherules w/ endospores
Histoplasma Cap	Hyphae in wild. Microcondida w/ tuberculate macrocondida. Fac intracellular. In the tissue it's a yeast w/ a small neck.
Blastomycosis	Hyphae in wild
Sporothrix Schenkii	Hypahe in wild. Potas iodide in milk. Pneumonia in alcoholics.
PCP	Obligate parasite. Kills type I pneumo cells. Ground glass

Gram (-) Bugs w/ Exotoxins	E. Coli; V. Cholera; Bordetella Pertussis		
Dermatophytes	Trichophyton: SHN Microsporium: SH Epidermophyton: SN Tinea tavus: permanent hair loss		
	Transmission	*Diagnosis*	
E. Histolitica	Cysts	Trophozoites or cysts in stool	
Giardia	Cysts	Trophozoites or cysts in stool	
Cryptosporidium	Cysts	Acid fast oocysts	
Balantium C.	Cysts	Trophozoites or cysts in stool	
Trichomonas V.	Trophozoites	Motile trophozoites	
	Fever	*Fever Spike*	
Vivax	Benign 3 degrees	48h	Enlarged Host Cell
Ovale	Benign 3 degrees	48h	Oval/Jagged
Malariae	4 degrees of Malarial	72hrregular	Crescent
Falciparum	Malignant 3 degrees		

Miscellaneous

1. Fastest growing tumor – Burkitt's
2. PE's are found in half of all autopsies
3. Courvoisier's Law: tumors that obstruct the common bile duct cause enlarged gallbladders, but obstructing gallstones do not (too much scarring), so if you can palpate the gallbladder you'e probably looking at cancer.
4. Only DNA virus to replicate in cytoplasm: Pox
5. Only RNA virus to replicate in nucleus: Influenza
6. *Bacillus anthracis* has the only protein capsule
7. *Bordetella pertussis* (Whooping Cough) elicits lymphocytosis rather than granulocytosis
8. Bronchioalveolar carcinomas grow without destroying the normal architecture of the lung
9. *Cryptococcus neoformans* often lacks a capsule and, when stained with GMS, looks just like *Pneumycistis carinii*, except that *Cryptococcus* lacks the prominent nucleoli.
10. Weil Felix reaction: (+)R. rickettssi & (+)Proteus vulgaris & P. mirabilis
11. Treponema pallidum (Syphilis) tests: 1)VDRL 2)FTA-Abs: most widely used 3)TPI (immobilization test – most expensive but the Gold Standard)

Cytokine	Source	Function
IL 1	12. Monocytes, macrophages	Stimulates T cell proliferation & IL2 produciton
IL 2	13. Macrophages, T & NK cells	Stim prolif of B, T & NK cell
IL 3	14. T cells	GF of tissue mast cells & hematopoietic stem cells
IL 4	15. T cells	↑ growth of B & T cells/ ↑ HLA II Ags
IL 5	16. T cells	Maturation of B → plasma cell
IL 6	17. T cells, monocytes	Maturation of B & T cell/ (-) fibroblasts
IFN α	18. B cells, macrophages	Antiviral activity
IFN β	19. Fibroblasts	Antiviral activity
IFN gamma	20. T & NK cells	Antiviral activity, (+) macrophages, ↑ HLA II Ags
TNF α	21. Macrophages, T & NK cells	T cell prolif, IL 2 prod, cytotoxicity
TNF β	22. T cells	T cell prolif, IL 2 prod, cytotoxicity

Tumor Suppressor Genes

Genes	Chrom.	Associated Tumors
VHL	3p	Von Hippel Lindau, Renal Cell CA
APC	5p	Familial adenomatous polyposis, Colon CA
WT-1	11p	Wilm's tumor

Rb	13q	Retinoblastoma, Osteosarcoma
BRCA-2	13q	Breast CA
p53	17p	Most human Cas
NF-1	17q	Neurofibromatosis type 1
BRCA-1	17q	Breast CA, Ovarian CA
DCC	18q	Colon & Stomach CA
DPC	18q	Pancreatic CA
NF-2	22q	Neurofibromatosis type 2 = bilateral acoustic neuroma

Physiology Equations

Resistance in Series: Add all
Resistance in Parallel: Invert the answer

RENAL:

Filtration Fraction = $\frac{GFR}{RPF}$ GFR: Glomerular Filtration Rate RPF: Renal Plasma Flow

Filtered Load = GFR x [Conc] Excretion Rate = [Urine] x Vel_{Urine}

Clearance = $\frac{[Urine]xVel(Urine)}{[Plasma]}$ or $\frac{Excretion}{[Plasma]}$ Clearance of PAH = [ERPF] ERPF: Eff renal plasma flow

Renal Blood Flow = $\frac{ERPF}{1-Hct}$ Free Water Clearance = Vel_{Urine} - $\frac{Urine(osm)xVel(urine)}{P(osm)}$

CARDIO:

CO = HR x SV CO = $\frac{O2(consumed)}{PulmonaryA-VO2difference}$ Pulse Pressure = Systolic – Diastolic

MAP = Diastolic + 1/3 Pulse Pressure CO = $\frac{MAP}{TPR}$ MAP = TPR x CO F = $\frac{P1-P2}{R}$

LUNGS:

$P_AO_2 = (760 - 47)\ FO_2 - \frac{PACO2}{R}$

Where:

$FO_2 = [O_2]$ P_ACO_2 = Alv. Press. Of CO_2 R = Resp. Exchange Ratio $\frac{CO2\,produced}{O2consumed} \cong .8$ or 1

Flow = $\frac{O2consumed}{AtoVO2difference}$ Vel_{gas} Diffusion = $\frac{Area}{Thickness}$ x Gas Diffusion Constant x Difference of Partial Press

$Vent_{Tot} = Vent_{Tidal} \times$ #of Respirations $Vent_{Alv} = (Vent_{Tidal} - Vent_{Dead}) \times$ # of Respirations

Compliance = $\frac{Vol}{\Pr ess}$ P = $\frac{Tension}{Radius}$ 1.0 = V_a/Q Diffusing Capacity = $\frac{COuptake}{PACO2}$

Resp Doubles: 150mmHg & 40mmHg New PCO_2 = 20 New PO_2 = 170

Adapted from Texas Tech University Step 1 guide