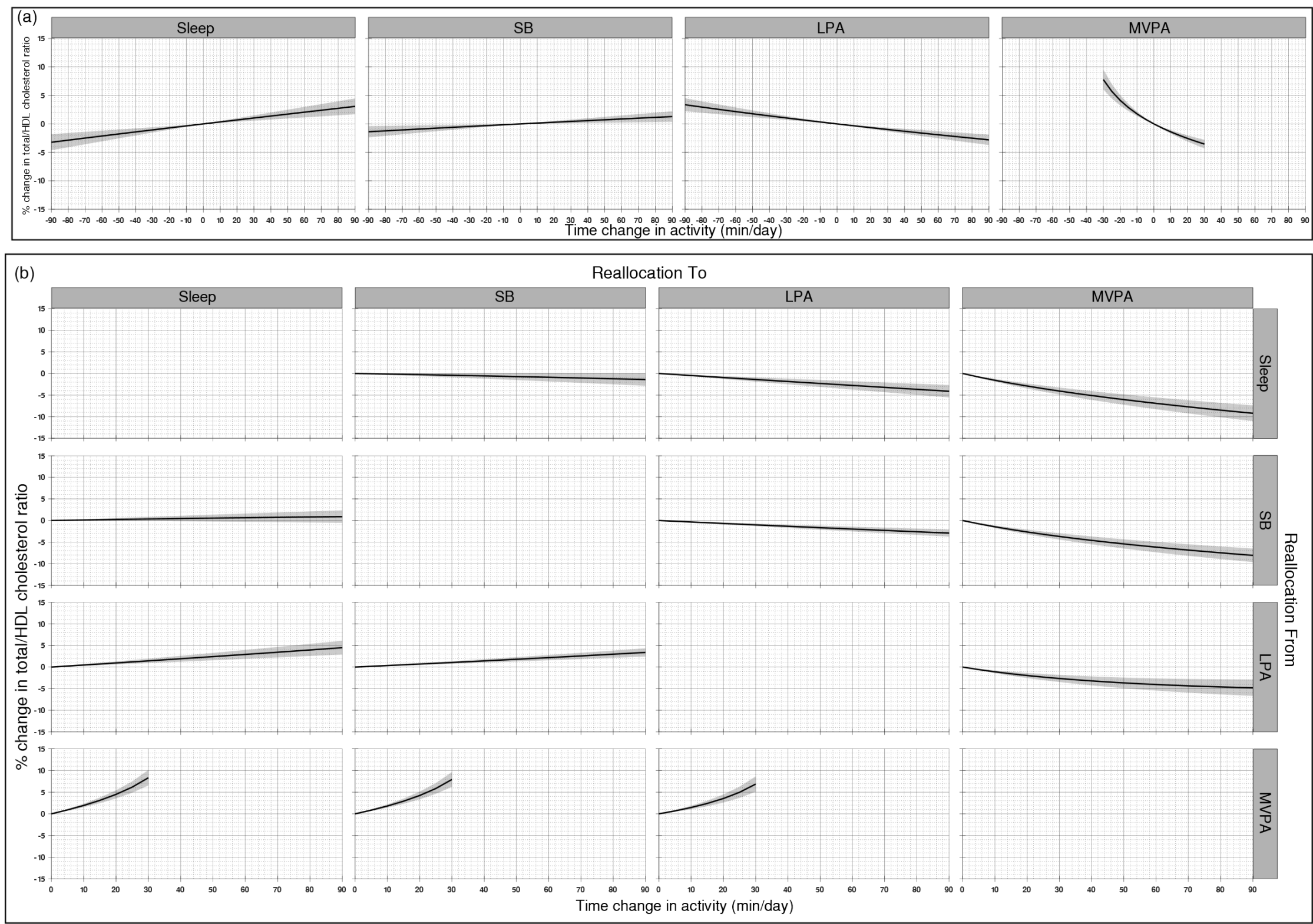


Supplementary Figure 2. Systematically altered movement behavior compositions and percent change in fasting plasma glucose.

(a) percent change for reallocation of time from one movement behavior relative to the remaining movement behaviors. **(b)** percent change for pairwise reallocation of time from one movement behavior (rows) to another movement behaviors (columns).

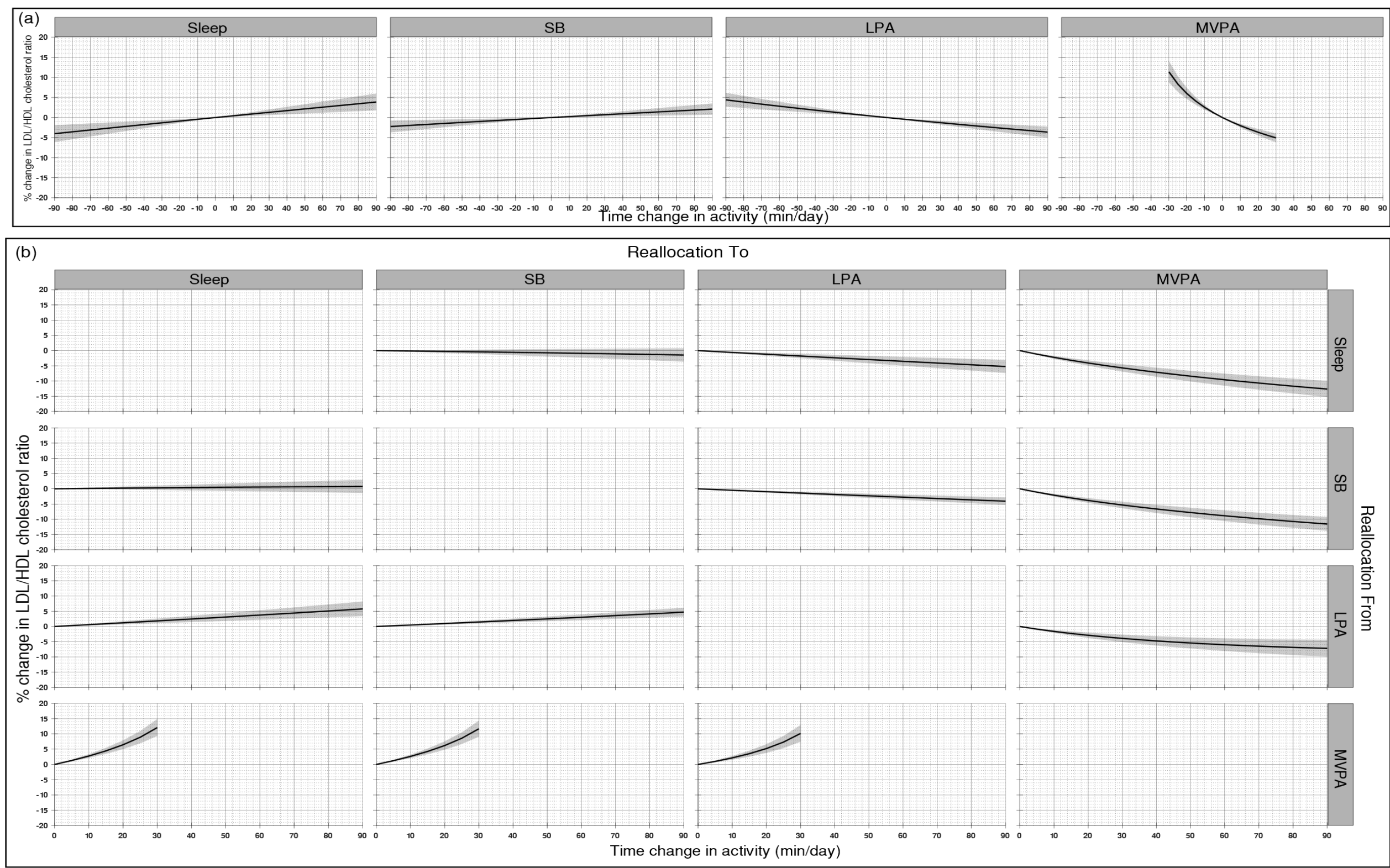
SB = sedentary behavior, LPA = light physical activity, MVPA = moderate-to-vigorous physical activity.



Supplementary Figure 3. Systematically altered movement behavior compositions and percent change in total/HDL cholesterol ratio.

(a) percent change for reallocation of time from one movement behavior relative to the remaining movement behaviors. (b) percent change for pairwise reallocation of time from one movement behavior (rows) to another movement behaviors (columns).

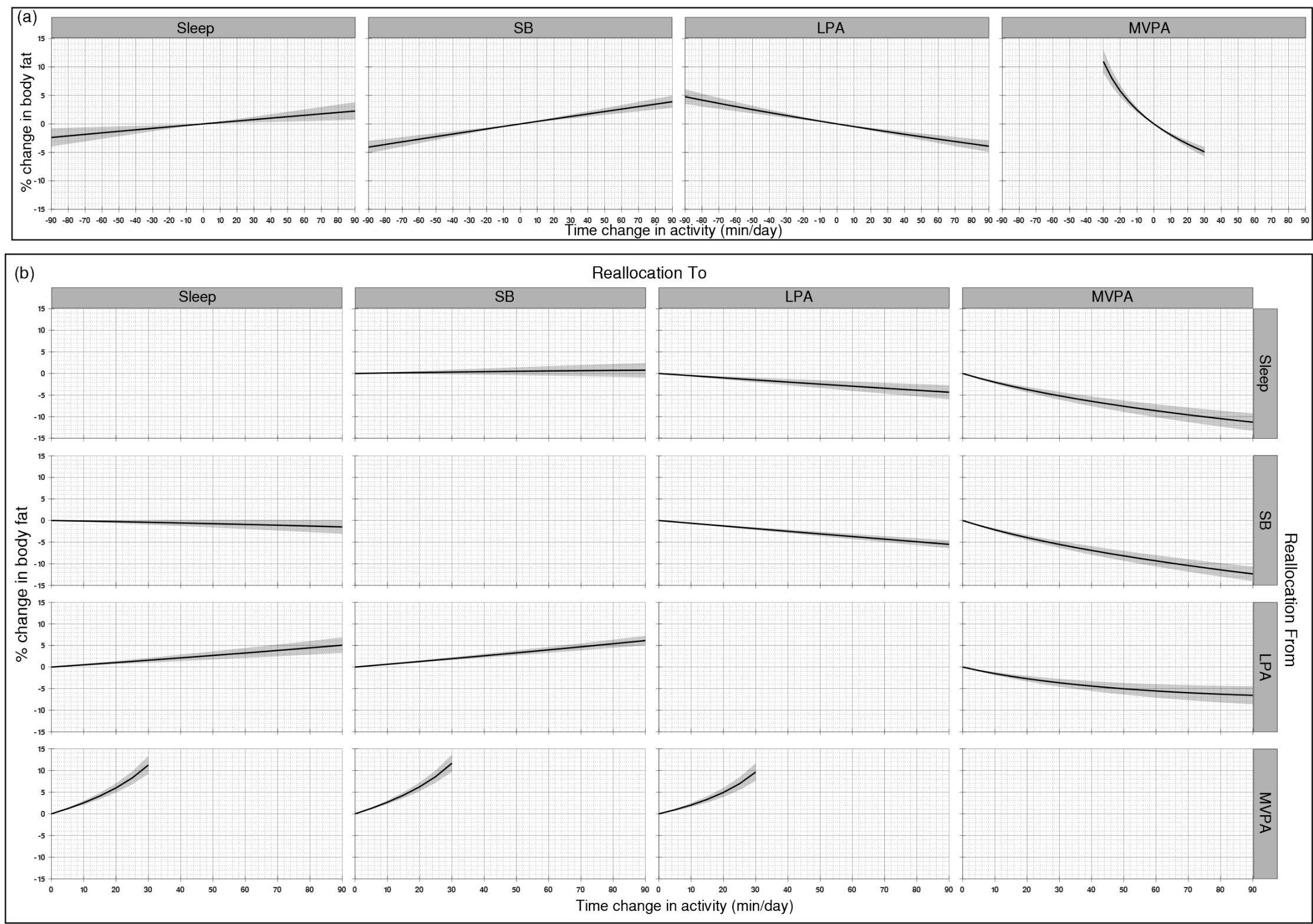
SB = sedentary behavior, LPA = light physical activity, MVPA = moderate-to-vigorous physical activity, HDL = high-density lipoprotein.



Supplementary Figure 4. Systematically altered movement behavior compositions and percent change in LDL/HDL cholesterol ratio.

(a) percent change for reallocation of time from one movement behavior relative to the remaining movement behaviors. (b) percent change for pairwise reallocation of time from one movement behavior (rows) to another movement behaviors (columns).

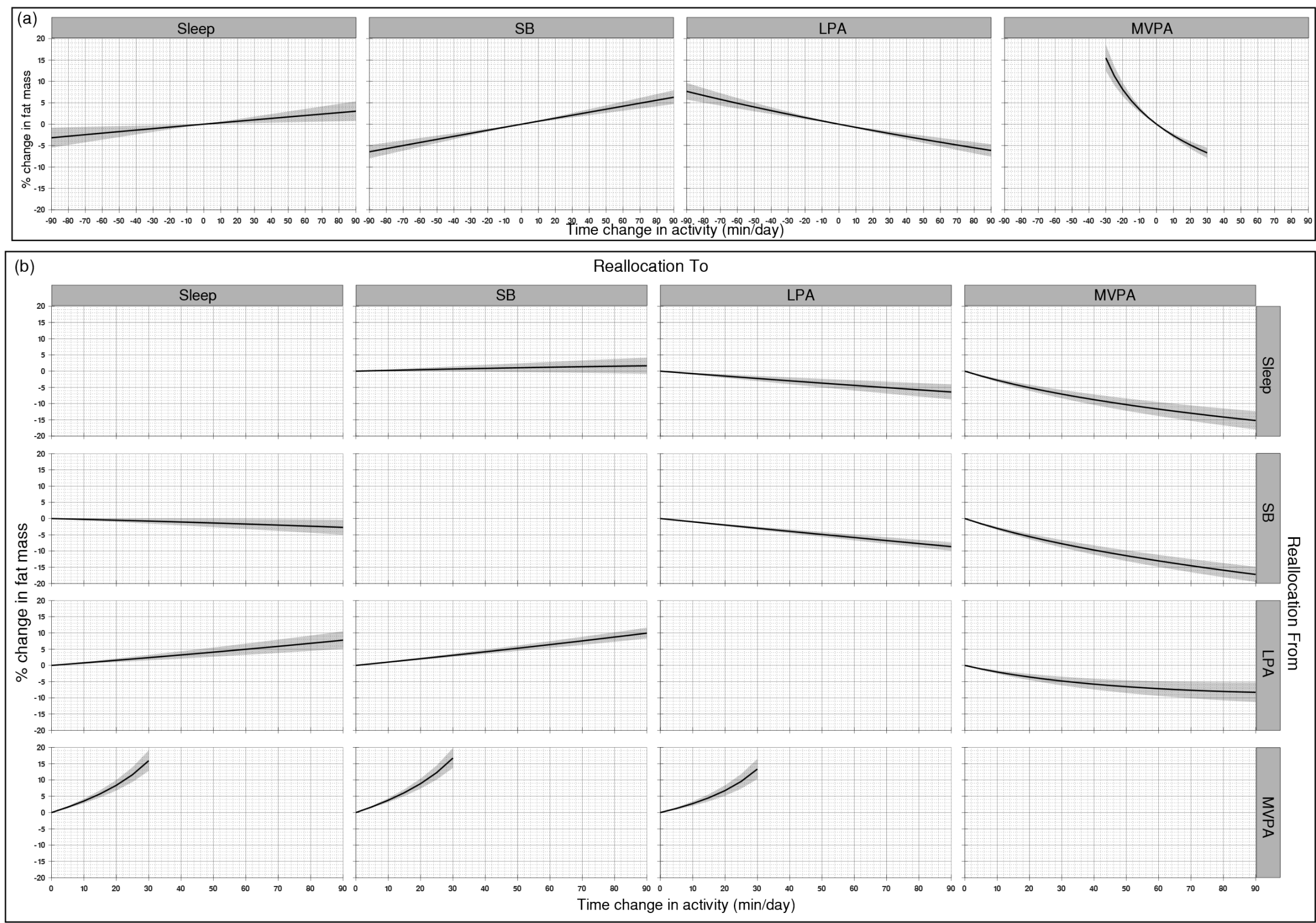
SB = sedentary behavior, LPA = light physical activity, MVPA = moderate-to-vigorous physical activity, HDL = high-density lipoprotein, LDL = low-density lipoprotein.



Supplementary Figure 5. Systematically altered movement behavior compositions and percent change in body fat.

(a) percent change for reallocation of time from one movement behavior relative to the remaining movement behaviors. (b) percent change for pairwise reallocation of time from one movement behavior (rows) to another movement behaviors (columns).

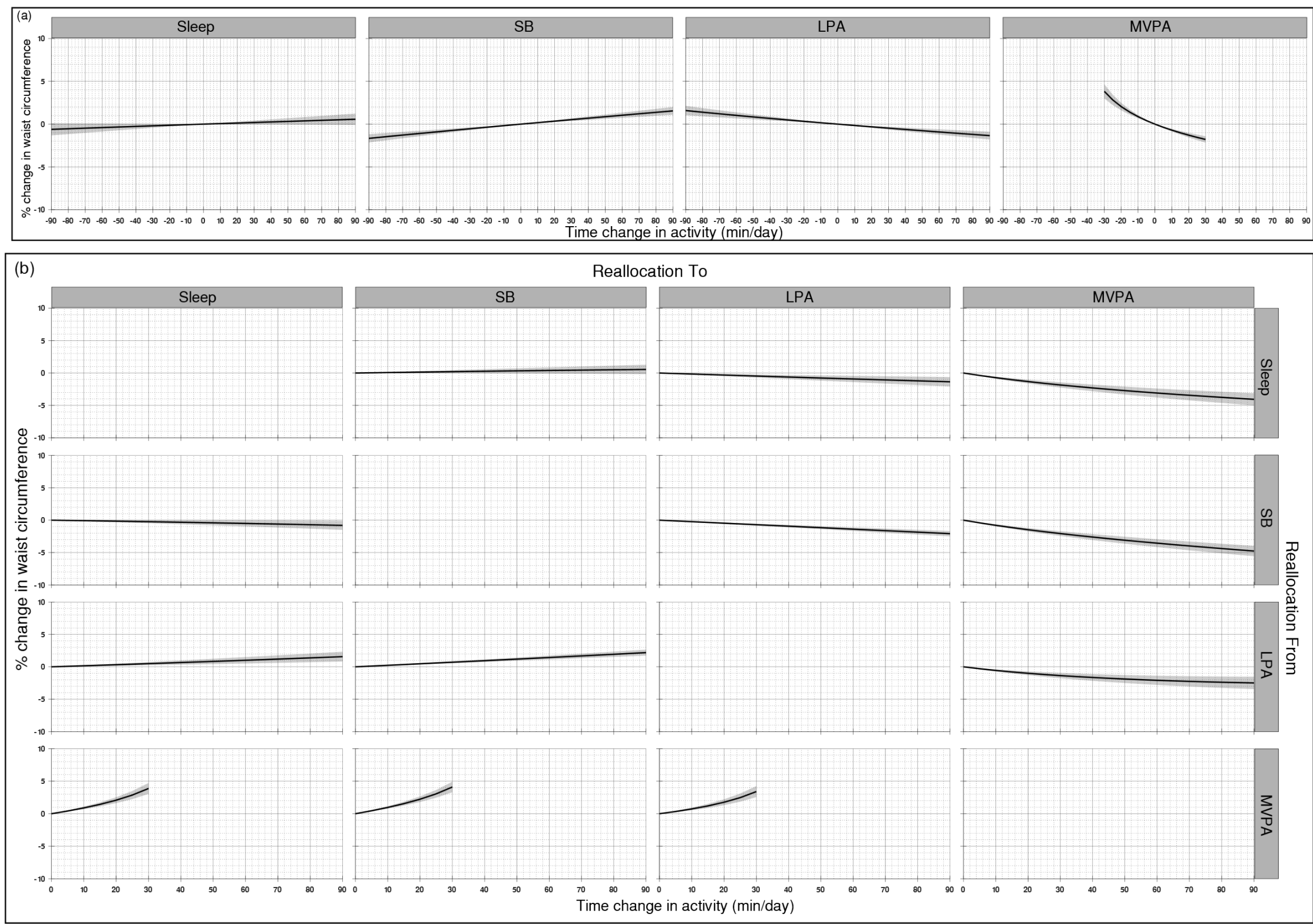
SB = sedentary behavior, LPA = light physical activity, MVPA = moderate-to-vigorous physical activity.



Supplementary Figure 6. Systematically altered movement behavior compositions and percent change in fat mass.

(a) percent change for reallocation of time from one movement behavior relative to the remaining movement behaviors. (b) percent change for pairwise reallocation of time from one movement behavior (rows) to another movement behaviors (columns).

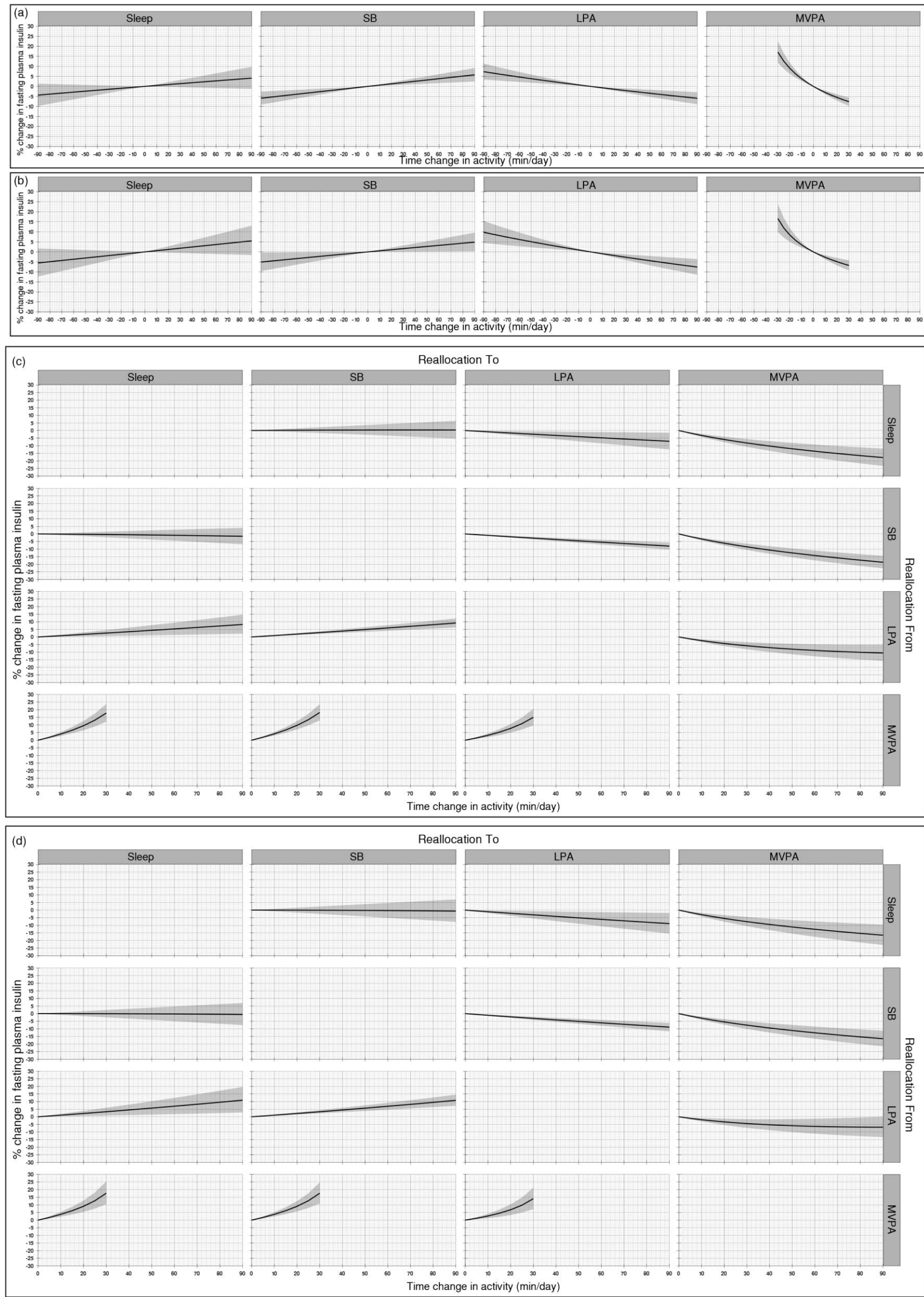
SB = sedentary behavior, LPA = light physical activity, MVPA = moderate-to-vigorous physical activity.



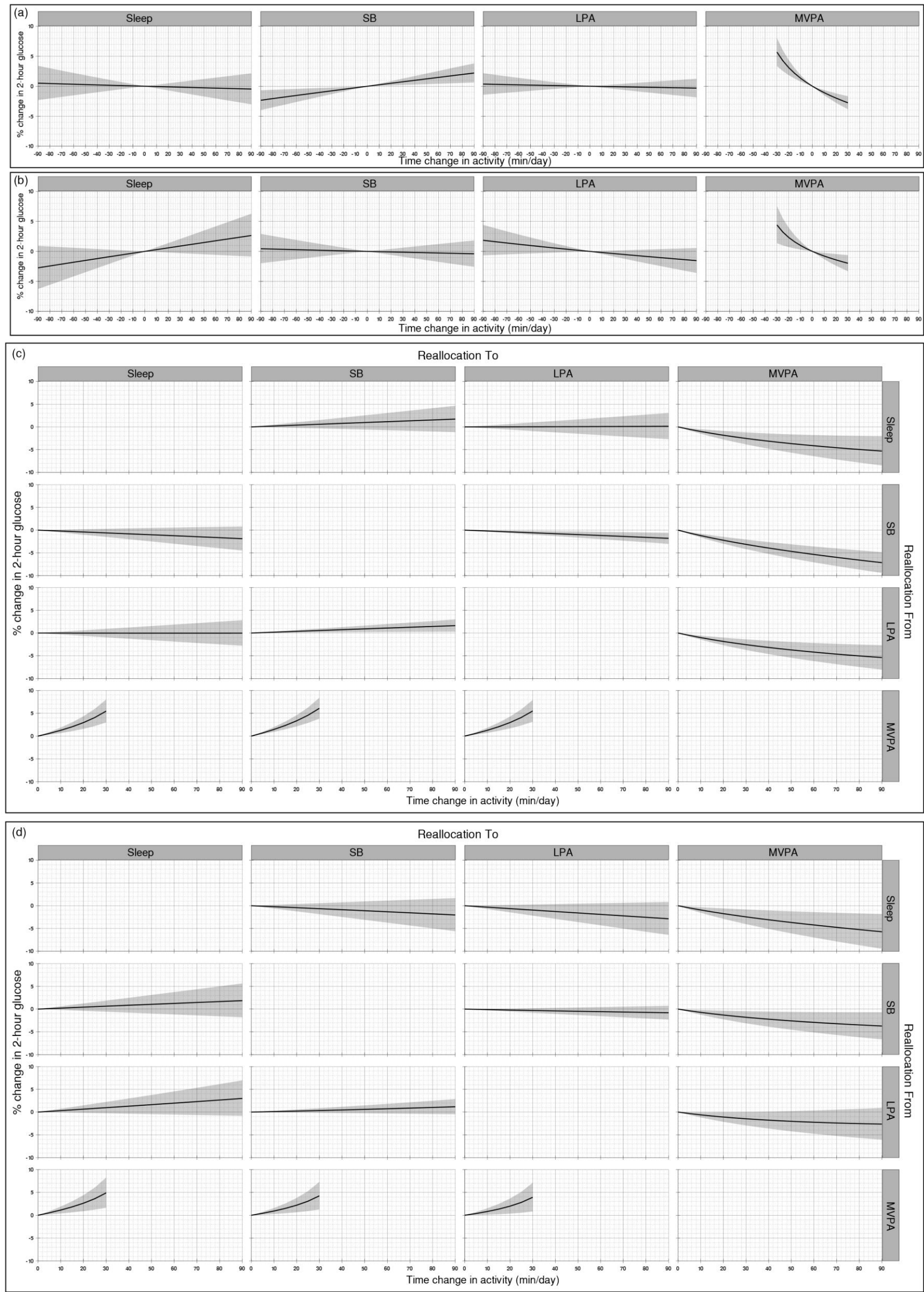
Supplementary Figure 7. Systematically altered movement behavior compositions and percent change in waist circumference.

(a) percent change for reallocation of time from one movement behavior relative to the remaining movement behaviors. (b) percent change for pairwise reallocation of time from one movement behavior (rows) to another movement behaviors (columns).

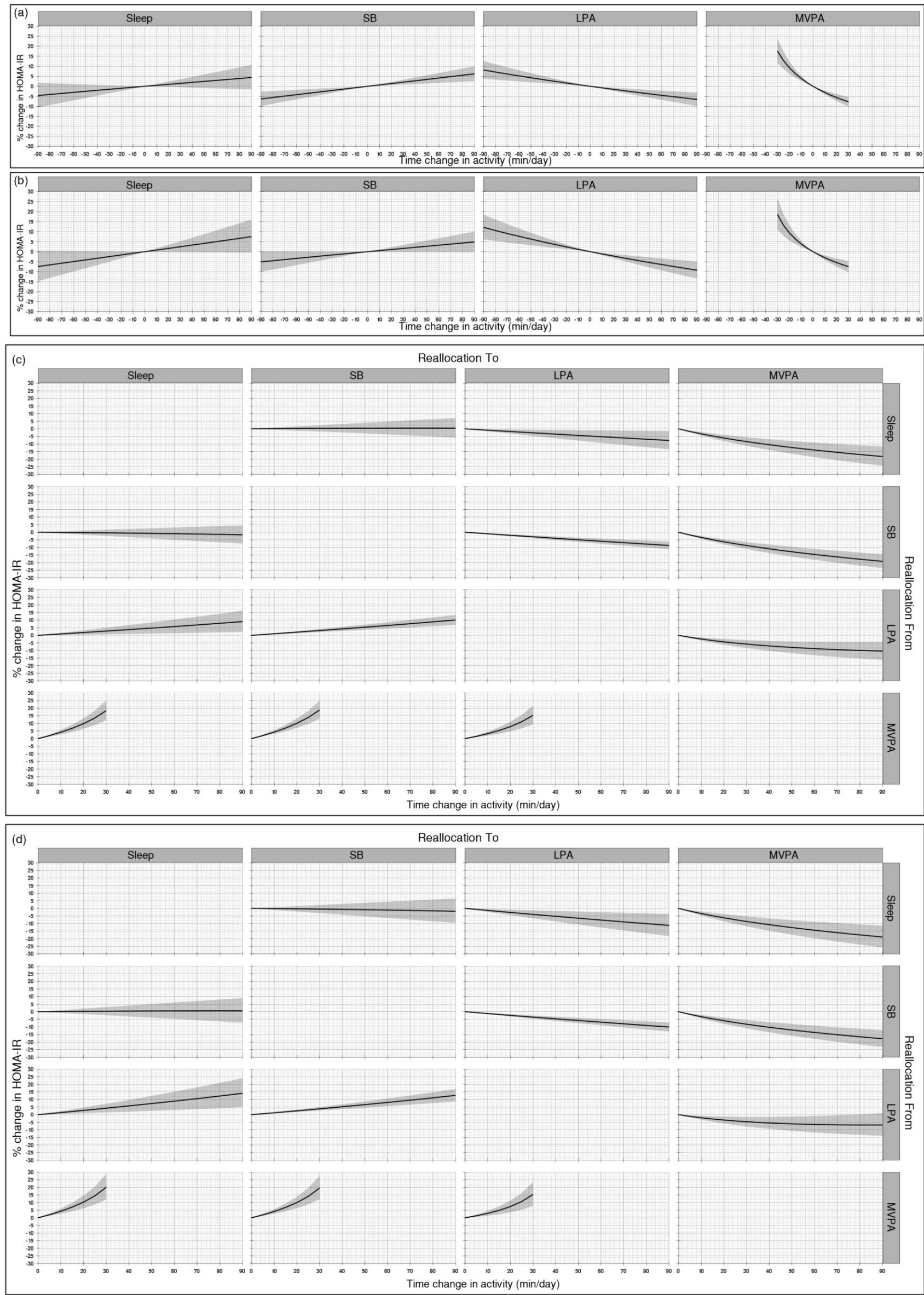
SB = sedentary behavior, LPA = light physical activity, MVPA = moderate-to-vigorous physical activity.



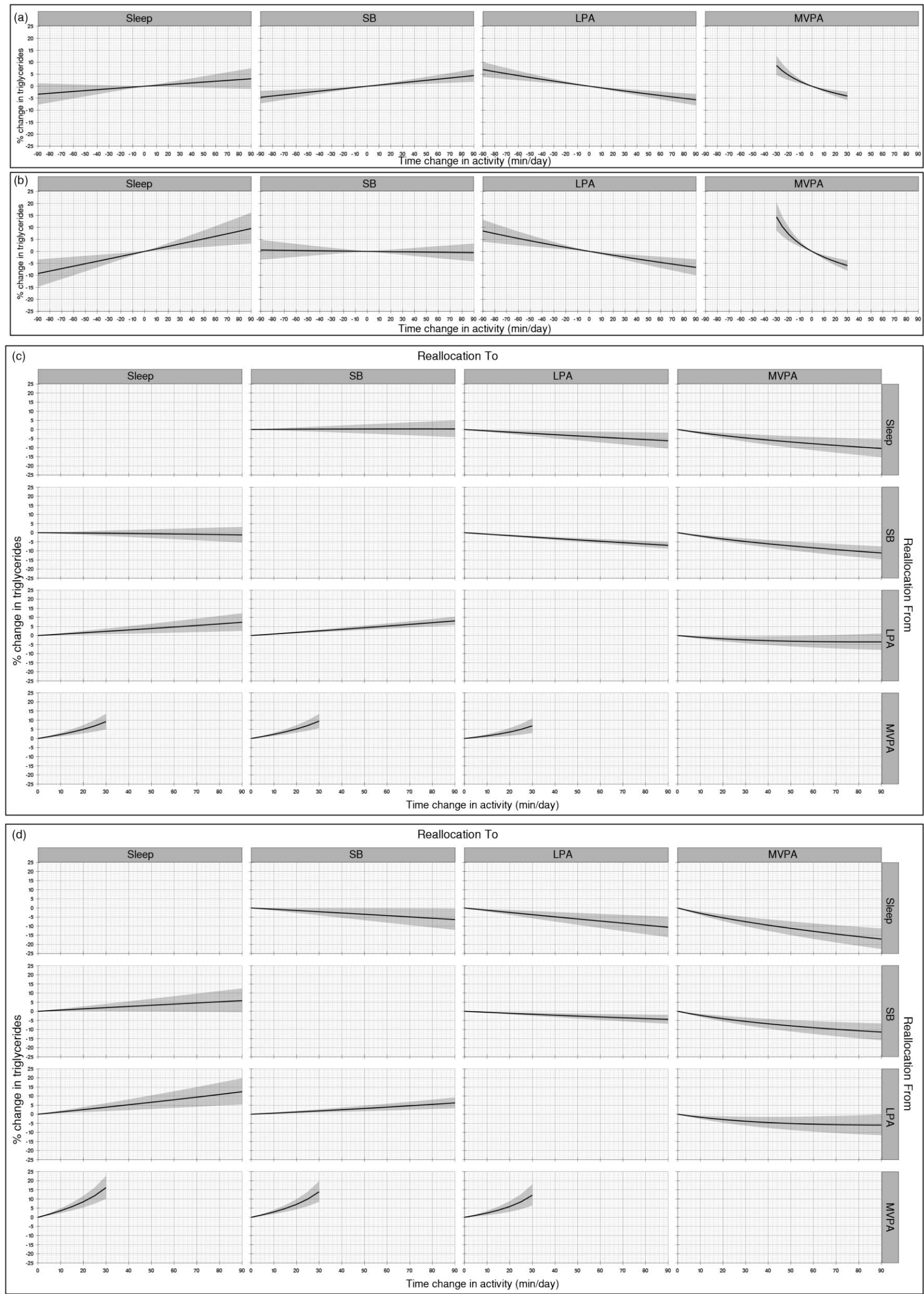
Supplementary Figure 8. Systematically altered movement behavior compositions and percent change in fasting serum insulin. (a) percent change for reallocation of time from one movement behavior relative to the remaining movement behaviors in individuals with sleep duration ≤ 7.5 hours/day, and (b) in individuals with sleep duration > 7.5 hours/day. (c) percent change for pairwise reallocation of time from one movement behavior (rows) to another movement behaviors (columns) in individuals with sleep duration ≤ 7.5 hours/day, and (d) in individuals with sleep duration > 7.5 hours/day. SB = sedentary behavior, LPA = light physical activity, MVPA = moderate-to-vigorous physical activity.



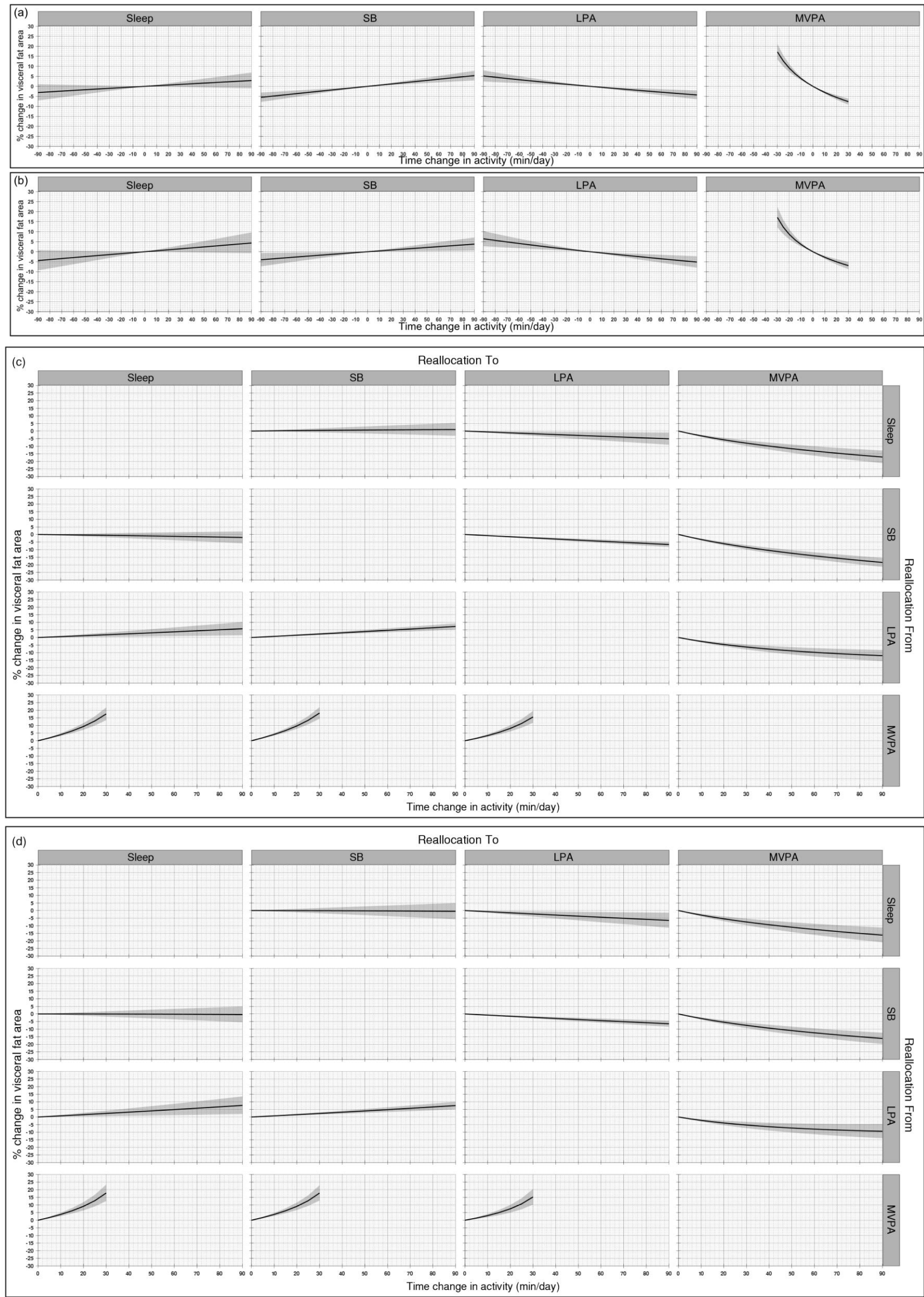
Supplementary Figure 9. Systematically altered movement behavior compositions and percent change in 2-hour glucose. (a) percent change for reallocation of time from one movement behavior relative to the remaining movement behaviors in individuals with sleep duration ≤ 7.5 hours/day, and (b) in individuals with sleep duration >7.5 hours/day. (c) percent change for pairwise reallocation of time from one movement behavior (rows) to another movement behaviors (columns) in individuals with sleep duration ≤ 7.5 hours/day, and (d) in individuals with sleep duration >7.5 hours/day. SB = sedentary behavior, LPA = light physical activity, MVPA = moderate-to-vigorous physical activity.



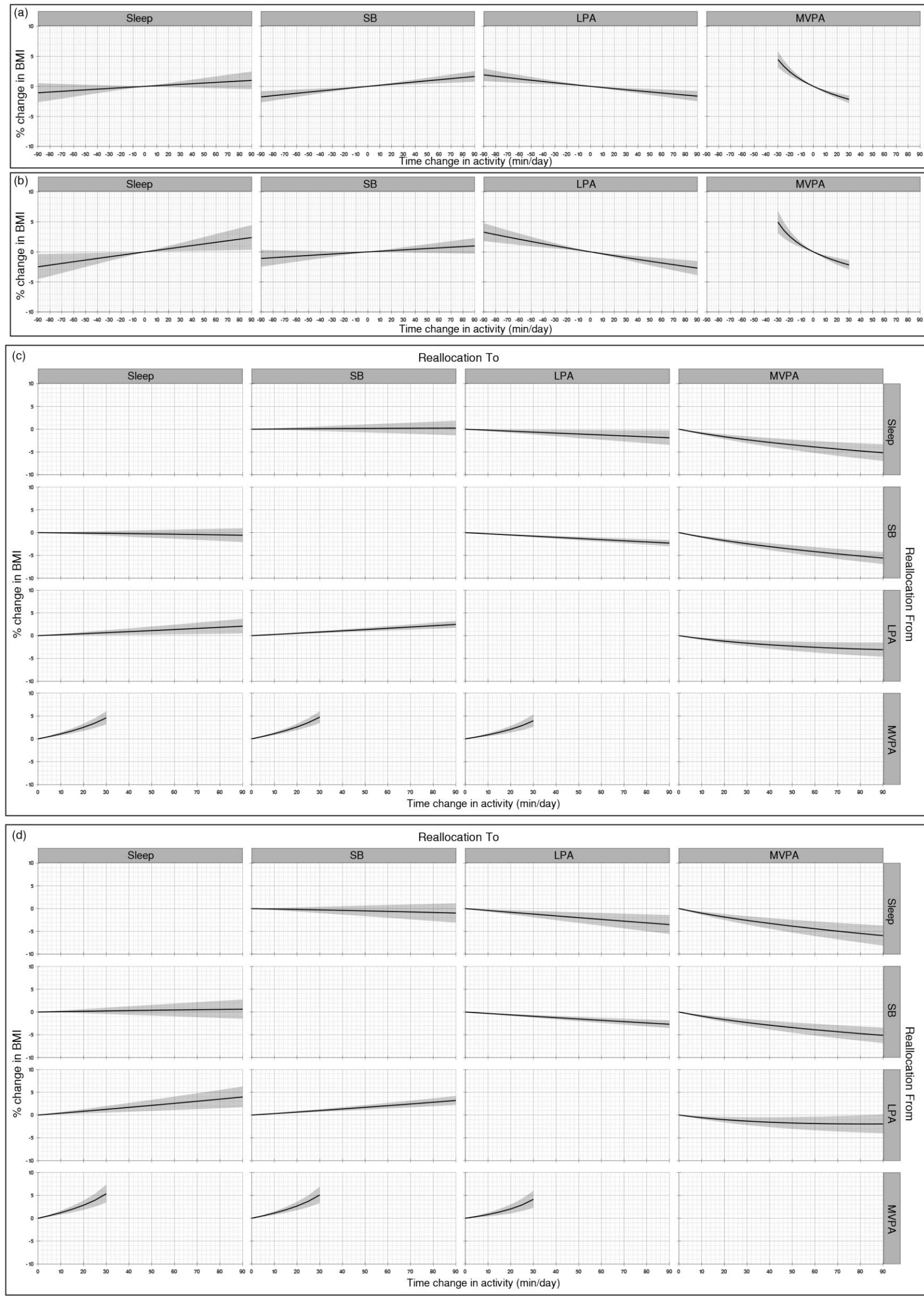
Supplementary Figure 10. Systematically altered movement behavior compositions and percent change in HOMA-IR. (a) percent change for reallocation of time from one movement behavior relative to the remaining movement behaviors in individuals with sleep duration ≤ 7.5 hours/day, and (b) in individuals with sleep duration > 7.5 hours/day. (c) percent change for pairwise reallocation of time from one movement behavior (rows) to another movement behaviors (columns) in individuals with sleep duration ≤ 7.5 hours/day, and (d) in individuals with sleep duration > 7.5 hours/day. SB = sedentary behavior, LPA = light physical activity, MVPA = moderate-to-vigorous physical activity HOMA-IR = homeostatic model assessment of insulin resistance.



Supplementary Figure 11. Systematically altered movement behavior compositions and percent change in triglycerides. (a) percent change for reallocation of time from one movement behavior relative to the remaining movement behaviors in individuals with sleep duration ≤ 7.5 hours/day, and (b) in individuals with sleep duration > 7.5 hours/day. (c) percent change for pairwise reallocation of time from one movement behavior (rows) to another movement behaviors (columns) in individuals with sleep duration ≤ 7.5 hours/day, and (d) in individuals with sleep duration > 7.5 hours/day. SB = sedentary behavior, LPA = light physical activity, MVPA = moderate-to-vigorous physical activity.



Supplementary Figure 12. Systematically altered movement behavior compositions and percent change in visceral fat area. (a) percent change for reallocation of time from one movement behavior relative to the remaining movement behaviors in individuals with sleep duration ≤ 7.5 hours/day, and (b) in individuals with sleep duration > 7.5 hours/day. (c) percent change for pairwise reallocation of time from one movement behavior (rows) to another movement behaviors (columns) in individuals with sleep duration ≤ 7.5 hours/day, and (d) in individuals with sleep duration > 7.5 hours/day. SB = sedentary behavior, LPA = light physical activity, MVPA = moderate-to-vigorous physical activity.



Supplementary Figure 13. Systematically altered movement behavior compositions and percent change in BMI. (a) percent change for reallocation of time from one movement behavior relative to the remaining movement behaviors in individuals with sleep duration ≤ 7.5 hours/day, and (b) in individuals with sleep duration > 7.5 hours/day. (c) percent change for pairwise reallocation of time from one movement behavior (rows) to another movement behaviors (columns) in individuals with sleep duration ≤ 7.5 hours/day, and (d) in individuals with sleep duration > 7.5 hours/day. SB = sedentary behavior, LPA = light physical activity, MVPA = moderate-to-vigorous physical activity, BMI = body mass index.