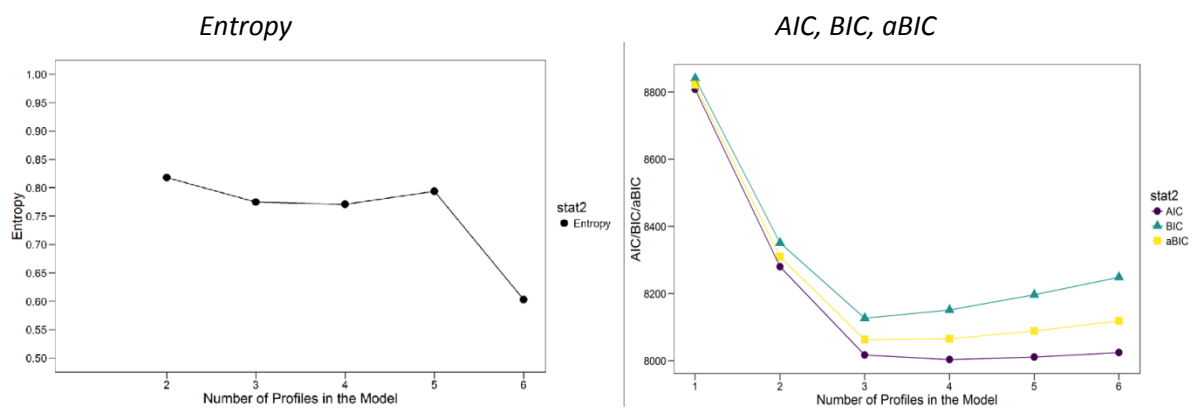


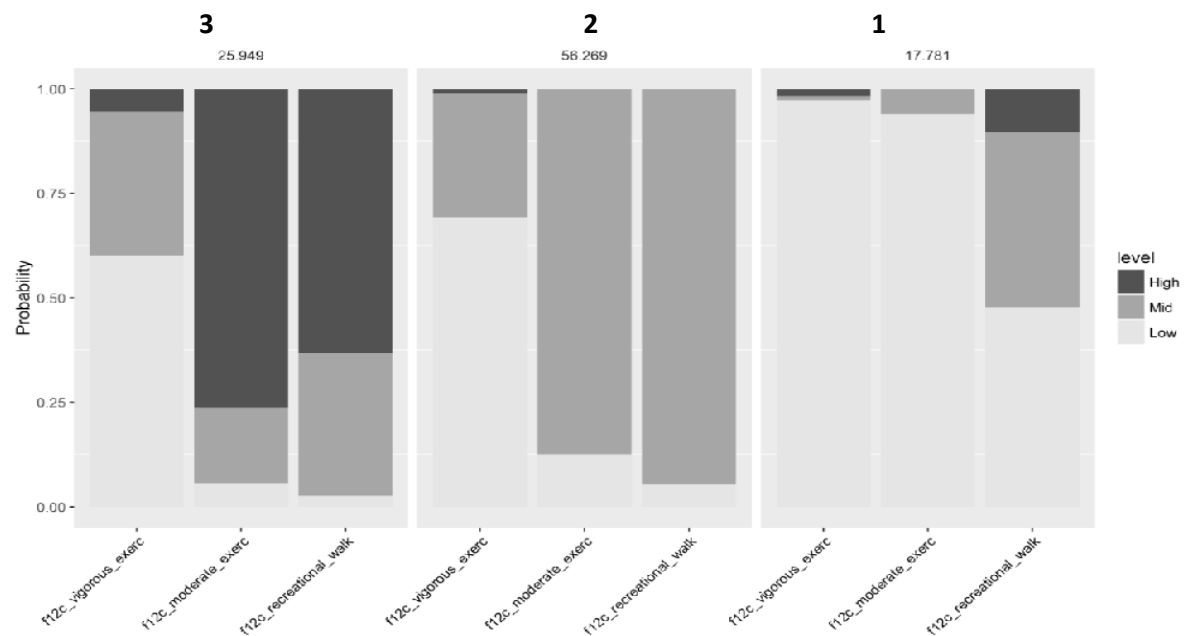
Supplementary file 4: Model fit statistics and three class model definitions

Latent class models were estimated using Mplus version 8.0. The model allowed the two thresholds for each of the 3-level response variables be freely estimated within each specified latent class. Maximum likelihood estimated was employed, using 10k random starts and 1k final stage optimizations. The best observed final stage log likelihood was consistently repeated across random starts. The Mplus code used to estimate the models, as well as additional information on model fit and information criteria and a graphical summary of the three latent classes we focused on, are given below.

a. Model fit statistics



b. Response probability for the three classes



Class 3 High Physical Activity Level: Active group (majority high level moderate exercises and walkers with some mid/high level vigorous exercisers)

Class 2 Moderate Physical Activity Level: Moderately active exercisers (majority mid-level moderate exercisers and walkers)

Class 1 Low Physical Activity Level: Predominantly low exercisers (with some mid/high level walkers)

c. Mplus code

```
Names =  
regid vigorous moderate rec_walk;  
Missing are . ;  
Usevariables =  
regid vigorous moderate rec_walk;  
Categorical =  
    vigorous moderate rec_walk;  
Idvariable = regid;  
Classes = c(3);  
ANALYSIS: Type    = Mixture;  
           Starts = 10000 1000;  
           processors = 3;  
  
MODEL:  
%OVERALL%  
%c#1%  
[vigorous$1* vigorous$2*];  
[moderate$1* moderate$2*];  
[rec_walk$1* rec_walk$2*];  
%c#2%  
[vigorous$1* vigorous$2*];  
[moderate$1* moderate$2*];  
[rec_walk$1* rec_walk$2*];  
%c#3%  
[vigorous$1* vigorous$2*];  
[moderate$1* moderate$2*];  
[rec_walk$1* rec_walk$2*];
```
