**VIBE aerobics class data**

These data represent activity measured during 3 separate aerobic classes. Each file corresponds to one subject in the study and the id field is formed as: subjectID\_aerobicClass, i.e 3394\_1

The variables gx, gy and gz are the “g” measurements at that precise moment on 3 axis with:

**gy** representing the vertical axis.

**gx** representing the lateral axis

**gz** representing the longitudinal axis

**\_jerk:** variables are the jerk experienced on the named axis.

**ms:** is the millisecond since the monitor started for each observation

**gap:** represents the time in ms since the previous observation was recorded.

**Activity:** variable labels each of the performed activities.

['Marching on spot', 'Spotty dogs', 'Warm down', 'bench steps',

'hamstring curls', 'jacks', 'knee lifts', 'leg mambo', 'warm up']

**Intensity:** differentiates each performed activity into the low intensity section (‘Low’) of the named activity and high intensity (‘High’) section. The period in between these 2 intensities is unlabelled and represents a period of time when the participants were performing side-steps (nan). This variable does not precisely identify the start and finish of the low and high intensity periods but should adequately split them up.

1 – low intensity - see paper

2 – high intensity – see paper

**Flip:** variable is a crude labelling variable to identify the monitor orientation. This simply identifies whether the monitor was seemingly correctly orientated (‘Ok’), upside down (‘Upside down’) or changing orientation (nan) to the body throughout the exercise. This variable has only be used to label the activities and not the warm up or warm down.

Flip variables

Unlabelled – correct positioning

1 – monitor upside down

2 – slipped in pocket – left out of process.

The activity variable labels each of the performed activities (see table below)

0 = 15 minute warm up (15 minute consisting of low intensity version of exercises)

1-7 exercise activities (see table below)

8 – 10 minute cool down (consisting of low intensity version of exercises)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Order** | **Type of Movement** | **Movement Description** | **Low Intensity** | **High Intensity** |
| 0 | Warm up |  |  |  |
| 1 | Step-ups on and off bench/ bench steps | Step R up, L up, R down, L down. | No jumping | Jump down |
| 2 | Jacks | Start with feet together, hands by side. Tap R leg out and lift both arms out to the side. Return to start position. Repeat other side. | Half jack | Jumping jack |
| 3 | Alternate leg mambo/ leg mambo | Step forward on R, step back on L, bring feet together and raise both heels and lower. Repeat on other side. | Heel raise on return | Jump on return |
| 4 | Spotty dogs | Feet together, tap alternate legs behind and back together. Arms reach forward or overhead. | Back tap (no jump) | Switch legs (with spring) |
| 5 | Double hamstring curl/ hamstring curls | Feet apart. Step onto R foot, bend L knee, bringing heel to buttock (knee pointing down to floor). Tap R foot down and pick heel up again. Step onto L foot and repeat all on opposite side. | No jumping/hopping | With jump and hop |
| 6 | Knee lifts | Step onto R, picking up L knee toward chest. Repeat on other leg. | Low level | With jump and hop |
| 7 | March/spring on spot / Marching on spot | Brisk march on the spot, bringing up knees and swinging arms. | Marching | Speed sprint on spot |
| 8 | Warm down |  |  |  |

Note: participants put the accelerometer on before the warm-up. The period of activity before the warm-up could represent sitting, walking but with this data we cannot be sure.

The table below is taken from another paper by my colleagues in Bristol which quantifies activity according to g band and includes walking.

This data was collected on older women 20 women (mean age 67) attending a similar aerobics programme to the present study and 10 women under supervised exercise sessions.

**Activities Associated with Different Bands**

| **G Band** | **Activity** |
| --- | --- |
| 0.5–1.0g | Walking[1](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4856876/table/T4/#TFN7),[2](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4856876/table/T4/#TFN7) |
| 1.0–1.5g | Stepping[1](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4856876/table/T4/#TFN7),[2](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4856876/table/T4/#TFN7) |
| 1.5–2.0g | Half jacks[1](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4856876/table/T4/#TFN7) |
| 2.0–3.0g | Lateral jumping[2](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4856876/table/T4/#TFN7) |
| 3.0–4.0g | Jogging[2](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4856876/table/T4/#TFN7) |
| 4.0–5.0g | Running, jumping[2](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4856876/table/T4/#TFN7) |
| > 5.0g | Drop jumps[2](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4856876/table/T4/#TFN7) |