

# Traffic light system for activity could redefine how we exercise

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This figure shows the results for five different physical activity dimensions that are all independently important for health for five different individuals. The physical activity dimensions represent overall physical activity energy expenditure (PAL) plus the time spent engaged in vigorous intensity activity, moderate intensity activity and total sedentary time. Some individuals will score highly (or poorly) across all dimensions (#2 and #99) but many individuals will score relatively highly in some physical activity dimensions and somewhat poorly in others (e.g., #8 and #28). Green indicates meeting a given target in each physical activity dimension whereas red indicates a low score (with amber being within 20% of the target value).

(Medical Xpress)—The traffic light system used as a guide to health information in food could be used in a similar way to help people become more active.

Researchers at the University of Bath and Teesside University found that by examining different aspects of physical activity and scoring these using red, amber and green, we can get a better picture about whether a

person is doing the right kind of physical activity for health.

The system works by [participants](#) wearing a body sensor which shows how much energy they burn, and then allocating this to various physical activity categories which are known to be important for health.

Dr Dylan Thompson from the University of Bath and Professor Alan Batterham from Teesside University examined physical activity energy expenditure over one week in 100 men using this system.

Dr Thompson said: "The results showed that some people score highly in certain types of physical activity, such as [moderate intensity](#) physical activity, but relatively poorly in other ways, such as overall physical activity energy expenditure.

"In other cases, some people look enormously sedentary if judged by sedentary time alone but, at the same time, they can score very highly for time engaged in vigorous intensity physical activity. If we only provide feedback to people on one of these measures, then they might form an inaccurate opinion about their physical activity."

Out of the 100 [young men](#), only 11 per cent showed an entirely consistent picture across the important physical activity dimensions, meaning most people scored relatively highly in some aspects of physical activity and relatively poorly in others.

Professor Batterham said: "This research confirms that some people engage in structured [exercise](#) but spend the rest of the time being quite sedentary. Conversely, other people might not engage in any notable exercise but, because of all the small things that they do throughout the day, perhaps including things like fidgeting, they can actually score highly in overall physical activity energy expenditure."

Generating a multi-dimensional picture of physical activity and using a simple tool like the [traffic light system](#) shows people that there are many ways in which physical activity and inactivity can have an effect on their health. Some of these might include things like engaging in vigorous intensity exercise sessions like going to the gym but others might include other types of movement such as standing rather than sitting, or walking to work instead of driving.

Dr Thompson said: "With new technologies it is now possible to capture more information than ever before and millions of people around the world are starting to use a variety of devices to do just this. It is very important that we provide these people with a well-rounded picture that does not just focus on one outcome.

"One of our concerns is that if we capture just one measure of physical activity this could be misleading for people and they might form the opinion that they are doing all the right things for their health when in fact there are other things that they could change to potentially get more benefit. Perhaps more importantly, for those people who are the least active, we should ensure that they understand that there are various options and ways to get some of the benefits from physical activity and there is more choice than ever before."

Professor Batterham added: "This is not so different to the picture for other behaviours such as diet – we have recognised for years that there are different dietary components that are independently important, such as; total energy intake, fat intake, saturated fat, simple sugars and so on. Providing a multi-dimensional picture for physical activity will also help people to understand that what they might need to do to change things like their weight may be very different to what they might need to do to gain other metabolic and health benefits from physical activity."

The research, which is published in the paper "Towards integrated

physical activity profiling" in the journal *PloSONE*, supports other recent research that shows there are positive benefits from just a few minutes of very high intensity activity and, conversely, very powerful negative effects from the accumulation of long periods of sedentary time.

Provided by University of Bath

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