

Exercise to be Joyous Experiences

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Introduction

They Don't Exercise Enough

Less than a third (24.2%) of US adults aged 18 and over met the 2018 Physical Activity Guidelines for Americans for both aerobic and muscle-strengthening activities set out by the Department of Health and Human Services, according to National Center for Health Statistics. This result was analyzed through more than 30,000 responses from its 2020 National Health Interview Survey [1]. The standard for healthy US adults was to spend at least 150 minutes per week doing moderate-intensity aerobic exercise and at least two days per week [2]. And only 16% of US adults living in rural areas met a standard for aerobic and muscle-strengthening activities. As for Japanese, the latest large-scale survey in 2022 by Japan Sports Agency reported that 27.1% of people sweat by exercising for at least 30 minutes, two days a week or more [3].

Exercise Benefits our Health

Japanese official physical activity guidelines 2013 for health promotion focused an active guide named "Plus 10" (add 10 minutes of exercise or physical activities onto your everyday living) to the public [4]. "Plus 10" is based on the results showing that additional physical activities lower the risk of diabetes, stroke, cancer, locomotive syndrome, depression, and dementia. "Plus 10" was expected to persuade Japanese general population to try moving a little more daily. An illustrated instruction to "Plus Ten" is available on the website of Ministry of Health, Labour and Welfare along with

messages such as "During the weekends and holidays, go out with your friends and family."

You Don't Like Exercise, Why Not?

As Mokdad classified lack of exercise as an actual cause of chronic diseases and death, [5] the belief in the value of exercise for health has now been weakening [6]. The World Health Organization has identified lack of exercise and physical activities, which is surely one of the most urgent health concerns facing the nations in 21st century.

Why do the nations have trouble with increasing exercise participants? For an answer to this question, I introduce remarkable statements by Mark Stephen Nesti in UK [7]. He described "Well, one problem might be that scientists, researchers, and policy makers are ignoring, or at least forgetting about some of the potential negatives associated with exercises. I would argue that one of the most important of these negatives is that for many people, exercise tends to be an uncomfortable experience." Then he showed why exercise participants don't increase as hoped. "Although governments and their agencies around the world will most likely welcome 'Exercise is Medicine' and the science that supports it, the equally important matter is how useful this will be encouraging people to increase exercise levels in the future."

"Encouraging people to increase exercise" is something to be paid an attention to. I often feel that executive staffs on exercise or physical activity programs are subject to make an offer to participants, on grounds of the benefits preventing non-communicable diseases as

well as promises of healthy longevity in the future. But instead of making an offer, I think it should be necessary to promise participants enjoyment and spontaneous joyousness during exercise. Fortunately, I have noticed one statement encouraging participants with joyousness of exercise. The statement in Key Guidelines for Children and Adolescents of Physical Activity Guidelines, US, [2] says “It is important to provide young people opportunities and encouragement to participate in physical activities that are appropriate for their age, that are enjoyable, and that offer variety.”

Sense of Fulfillment by Exercising

Those who have the habit of exercise tend to feel a higher sense of fulfillment in life than those who don't have the habit of exercise, the National Institution of Biomedical Innovation, Health and Nutrition reported. Noriko Sekine mentioned in Mainichi Japan (among the biggest newspaper in Japan, English edition) on 12 October 2023 that the causal relationship between an individual's exercise habits and their sense of fulfillment in life hasn't been clarified. But if a person achieves their goal in sport, they may experience fulfillment. While we don't know which comes first (between the exercise habit and the sense of fulfillment), they likely affect one another.

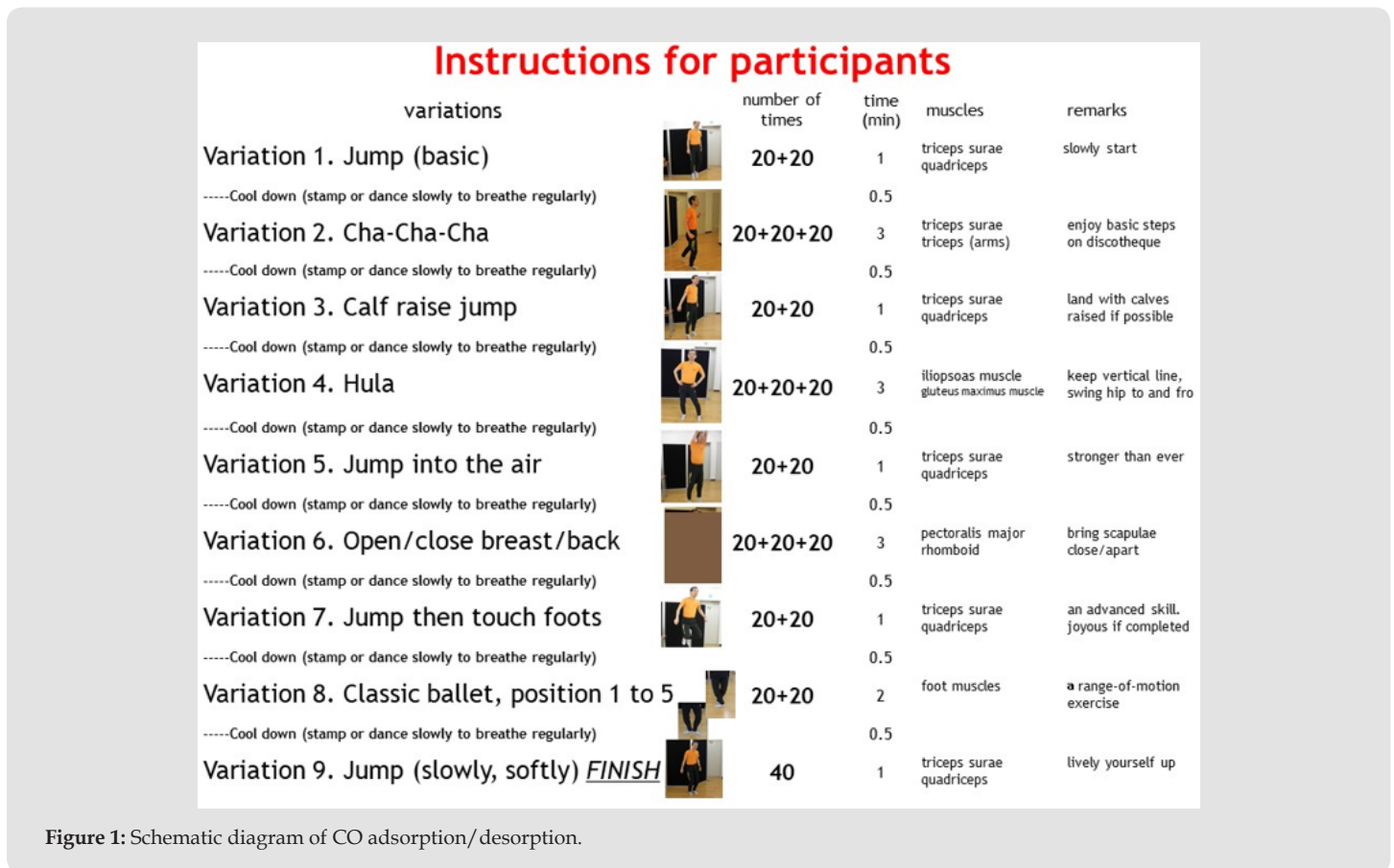


Figure 1: Schematic diagram of CO adsorption/desorption.

Give Physical Joyousness to Exercise

The author developed an exercise regime including syncopation combined with turns and jumps inspired by classic ballet figures on a floor of 1 x 1 square meter. (Figure 1) This routine interposes jump variations of high metabolic equivalents (METs). Research staffs experienced feelings of joyousness and exuberance (Table 1). The research was aided by A Metropolitan Government research fund to private school, 2011-2013. The author was finding such exercise skills with joyousness by searching

- 1) 150 books, 50 DVDs, 5 Blu-ray disks on healthy exercise released after 2000, and
- 2) Studio exercise courses with membership such as ZUMBA, Hip-hop ABS, FIGUREROBICS (South Korea), trf EZ DO DANCERCISE (Japan) in Tokyo in 2010-2017. After a trial of 20-minute exercise by 6 research staffs of age 25 to 55, a 20-minute exercise routine to 60 female technical college students of age 19-40 and teachers of age 25 to 55 revealed consumption of 90-110 kcal/20 min. Example of calculation is,

$$6 \text{ METs (intensity)} \times (20/60) \text{ (duration, hour)} \times 45 \text{ kg (body weight)} \times 1.05 \text{ (constant)} \\ = 94.5 \text{ kcal (calorie consumption)}$$

Table 1: 120 beats/min non-stop music for 20-minuts exercise routine.

Non-stop dance remix (from "AV8 presents Cereb party Mix Vol.2, LEXINGTON")	Time
Intro	0:42
1 Telephone-DJ Friendly Mix/DJ Danny Diggz	1:42
2 Tik Tok Car Break/DJ Car	1:49
3 California Girls-Cali Club Mix/DJ Scooter	2:18
4 Conga Shake-Steve1der Remix/DJ Steve1der	1:32
5 Girls Just Wanna Have Drums/DJ Sizzahandz	1:38
6 Heaven Is A place On Earth/Rock-It! Scientists	1:04
7 Lady's Night/DJ stitch	1:20
8 Music Sounds Better With A Break Beat/DJ Serafin	1:46
9 One More Time-AV8 Special Remix/ Fatman Scoop	1:12
10 One More Time vs Jump Around/DJ Starski	1:52
11 Walk This Way-AV8 Special Remix/ Fatman Scoop	1:35
12 Hip Hop Horray (Hands In The Air Transition) Jake Reno	1:50
13 Every Girl (Surprise Jay-Z Ending)/ DJ Danny Diggz	2:16

Exercise at 6 METs corresponds to slow jog, basketball, slow swim [8]. 44 out of 60 students felt joyous (28) or good (16) after the exercise. 15 students preferred higher intensity (5), lower intensity (6), grapevine (3), or reggae (1). One student had no answer. Students who preferred higher intensity had experienced sports club activities in high school years.

Syncopated Movement to Generate Joyousness

A medium degree of syncopation has been demonstrated to elicit the strongest motivation to movement and induce the greatest pleasure in dance [9]. A moderate amount of syncopation is effective in creating the sensation of groove [10]. Satoh et al [11] reported that physical exercise combined with music produced more positive effects on cognitive function in elderly people than exercise alone. Fitch [12] reported that core aspects of musical rhythm, especially "groove" and syncopation, can only be fully understood in the context of their origins in the participatory social experience of dance.

Generally, Japanese very often have an old-fashioned onbeat rhythm with accented beats on the 1st and 3rd of the bar. Thus, the author is now demonstrating an offbeat (2nd and 4th of the bar) feeling which makes a groove at the author's exercise course in Aomori Prefecture, Japan. Recently a hip-hop dance exercise during club activities as well as at dance studios are growing popular. A sense of groove with syncopated movement will be desirable for feeling joyousness during exercise. My ambition is to further analyze the combination of exercise with syncopated movement to promote enhanced states of well-being.

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