

# Daily recommended effective and safer walking and running from integrative medicine

## Abstract

From Integrative Medicine point of view, people tend to exercise less, leading to decreased physical, nutritional and cognitive function. Authors have been involved in rehabilitation and workshop for various subjects with masters' athletes. Previous walking methods have some problems, such as stretching the chest, large movement of arm swing, heel touchdown with extended knees and push backward with thumb-ball. In contrast, our recommended methods include walking with the concept of centered position, using the gravity center and reflection power by flat grounding, adjusting speed and striding with forward leaning angle and creating some effective image in the mind.

**Keywords:** masters' athletes, gravity center, flat grounding, forward leaning, physical function

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## Editorial

For COVID-19 pandemic worldwide, people have been refraining from going out for preventing infection.<sup>1</sup> In particular, senior generation may have larger influences from inactivity.<sup>2</sup> Decreased exercise will cause deterioration of physical function.<sup>3</sup> The elderly also shows deterioration of nutritional status, leading to sarcopenia and frailty.<sup>4</sup> Furthermore, they will be involved in decreased cognitive function.<sup>5</sup>

For these health and medical problems, authors have continued diagnosis, rehabilitation, treatment and other related activities.<sup>6</sup> They include several lectures for exercise and nutrition for maintaining and improving QOL.<sup>7</sup> The subjects are from elementary school students, junior and senior high school athletic club members, general sports enthusiasts and Masters athletes.<sup>8</sup> In this article, some perspectives for regular exercise and recommended effective and safer walking and running will be described.

When the target subjects are middle-aged people, the goal would be set for smooth walking in the usual life style and additionally jogging and running that develop successively.<sup>9</sup> Therefore, our purpose to fundamentally teach them is i) to make basic habit keeping a correct posture, ii) to improve the flexibility of the trunk,<sup>10</sup> and iii) to use rational physical activity. Regarding the second acquisition of flexibility, the authors have proposed and developed stretching exercise using bamboo pole so far (Figure 1).<sup>10,11</sup> After understanding and implementing these three aspects, "adequate walking" will be discussed which is the important basics of all body movements.

In order to walk and run smoothly, braking element can be reduced as possible. Furthermore, application for effective movement of the center of gravity, and of the gravitational fall energy can be beneficial measures.<sup>12</sup> These factors can give the additional power to obtain propulsion. Because walking is a fundamental activity of daily living, walking with rational physical activity will become a simple and effective training for everyone.<sup>13</sup> There were many lectures for how to walk better so far, but several problems can be found in previous information and method. Consequently, this article will describe to clarify four problems of known walking method so far, and to

recommend rather ideal walking method that we have advocated so far.



**Figure 1** Exercise workshop for stretching exercise using bamboo pole.

1. Posture of stretching the chest: Four problems in previous walking way are shown. When stretching the chest with warping the back, this posture will make the chest hardening, which may interfere the smooth breathing movements (Figure 2). Since the upper body becomes upright position, the propulsive force may be used for upward direction. Consequently, this movements may yield wasting powers. As the harder you work, the greater the movement will become in vertical direction. Continuing such posture may cause low back pain due to holding the warped lower back.<sup>14</sup>
2. Large movement of arm swing back and forth: This movement exerts force on the shoulders, solidifying the trunk and creating unnecessary muscle tension.<sup>15</sup> The problem would be the situation that the upper body and pelvis are twisted. In other words, the upper body pulls back the forward movement of the leg, which may cause braking mechanism. In addition, this twist makes breathing shallower and affects respiratory and circulatory function.
3. Heel touchdown with extended knees when grounding: When walking with a wider stride, the center of gravity remains behind. Then, the ground contact is made by the heel associated

with extended knees. Because the knees are extended, it acts as a brake when touching down, and the impact is strongly transmitted to the knees, hip joints, and hips, which may cause the pain of these joints.<sup>16</sup>

4. Push backward with the thumb-ball: In order to go forward, one must kick on the toe or push backward with the thumb-ball. For this situation, the leg usually extends while rotating outward and remains behind the body. Then, extra force will be required for the forward swinging motion (turnover).<sup>17</sup> Regarding the posterior push phase during walking, the toes and knees are misaligned, which may lead to joints pain and injury of foot, the Achilles tendon, knee and hip joint.



**Figure 2** Well-known previous walking method using muscle power.

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Next, the recommended walking method is shown (Figure 3). Adapting this way, one can move forward without using excessive force. We always present actual tips how to walk, jog and run smoothly for 15 minutes in each workshop. There are four important points in the following.



**Figure 3** Recommended present walking method using center of gravity.

1. Walk with the concept of centered position: First of all, it is crucial to hold the correct posture. By extending the nape of the neck, it is possible to create a posture in which the center line exists.<sup>18</sup> If one feels the center line, one can hold relaxed status with natural manipulation of arms and legs.
2. Use gravity center and reflection power by flat grounding method: Do not try to force a wide stride. While maintaining forward leaning posture, walk with a reasonable stride. Then,

the foot touches the ground just below the center of gravity of the body. This is the genuine natural, soft and flat grounding.<sup>19</sup> When one touch the ground flat, one can instantly relax the knees. Then, the braking mechanism is reduced, and the spring power (stretch reflex) generated in the hamstrings provides a forward propulsive force.

3. Adjust speed and stride with forward leaning angle: It is important to feel the forward leaning for the center line of the body.<sup>20</sup> The deeper forward leaning posture, the higher pitch cycle and the longer the stride width. One can feel this natural movement, when relaxing the body without muscle tension. As the forward angle increase deeper from walking to jogging and running, the pitch and speed will automatically increase.
4. Create effective image in the mind: For the beneficial image of one's posture, the bamboo dragonfly that is traditional Japanese toy can become a reference. Further, a helicopter or drone is similar example. Have this imagination and feel the spine straightly floating. Some useful examples can be described in the following.
  - a. Feel the back of the head hanging from the ceiling, which is sky hook feeling<sup>21</sup>
  - b. Intend to go diagonally forward and downward, looking at the position 10-20m ahead of the ground
  - c. Image the upper end of the sternum pulling from the upper forward ceiling
  - d. Have a sense that someone is pushing your back from behind
  - e. Feel the pelvis at the upward position in the chest and the legs hanging with relaxation

If one feels the above, one can walk with totally relaxed situation.<sup>22</sup>

## Conclusion

In summary, the traditionally recommended walking methods have some problems, and we have provided an overview of them. On the other hand, our recommended method is to hold the central axis of the body firmly, raise the center of gravity, relax, and have a proper image, and then anyone can accelerate naturally without wasting force. These continuations have beneficial results for physical function, nutrition, cognition, and quality of life (QOL).<sup>23</sup> We hope that this article will be useful to many people for daily life.

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## Conflicts of interest

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