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Why Ergonomic Backpack?

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Introduction

According to the statute of the World Health Organization (WHO), health is considered as an individual and social value, and one of the most obvious human rights and needs[1]. The carriage of heavy schoolbags by children is a concern for all those involved in student health and well-being[2]. Backpacks are the most commonly used type of bag, and overweight backpacks are associated with several health issues, including increased spinal curvature, discomfort, and back and shoulder pain [3]. While, it has been argued that the majority of students were carrying as much as 30% to 40% of their body weight[3]. In this way posture modifications have been reported when children carry a load that corresponds to more than 10% of their body[4].

In addition, items carried by students in their daily school bags have been found to include books, pencil cases, scientific calculators, sport-specific training clothing, lunch boxes and full water bottles[5]. Even an empty backpack can distort posture and cause pain,there is no way to safely carry weight in a backpack, no matter how light the load, because it disrupts our body mechanics by design[6].

When posture is distorted, our joint and muscle mechanics become distorted as well. Even light loads applied to disrupted mechanical systems produce damaging forces in the joints and muscles[7].

Regardless of how ergonomic a backpack is, there are some basic rules of good ergonomics when handling a backpack you should always follow[8].

Ergonomic Backpacks

Backpack loads should be reduced both because they exceed proportionally the limits set for adults and frequently cause discomfort, and also because fatigue during backpack carrying and time spent bearing the backpack on the shoulders are parameters associated with back pain. Ergonomics is the scientific discipline concerned with understanding of interactions among humans and other elements of a system[9].

Conventional backpacks used as schoolbags adversely affect the health, safety and productivity of developing school children, in clear opposition to the goals of ergonomics[10]. They are off-axis, posterior-loading systems, causing the body to compensate with postural distortion[11]. The postural distortion will continue unless the load is aligned with the body's axis, in obedience

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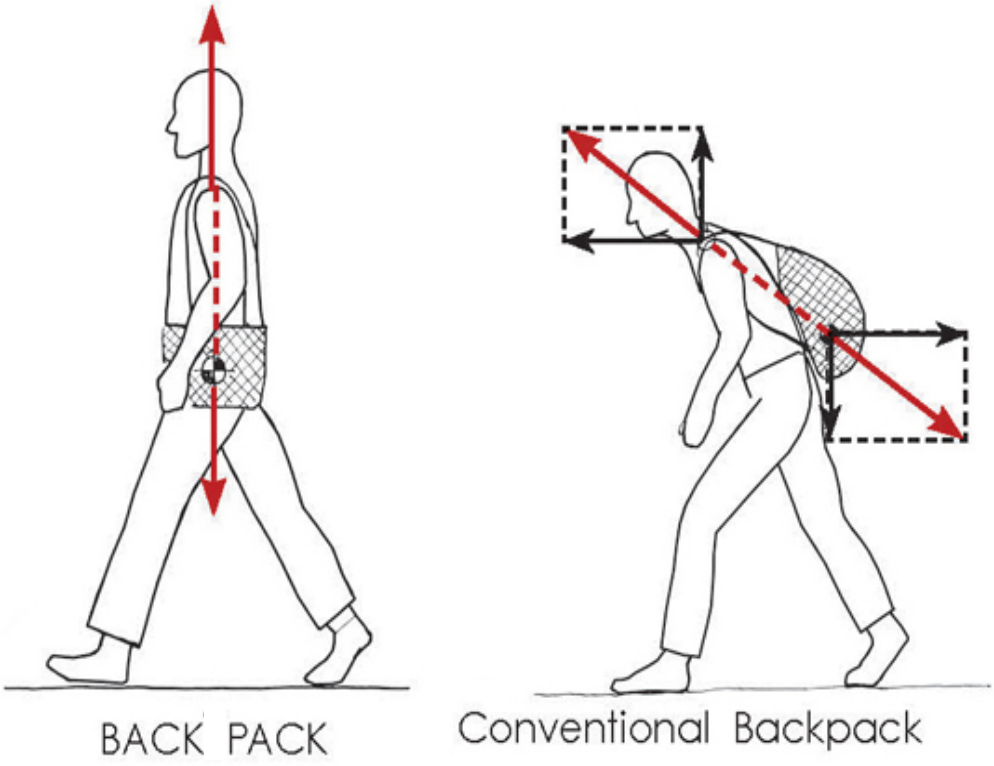

to the laws of physics and physiology [12]. An ergonomic backpack has been designed to give you a healthier, more efficient and comfortable way to carry around your belongings[13].

These backpacks differ from others in that they are been specifically designed to reduce the strain of a bag on your back but also make it easier to carry around your important belongings, whether it is a laptop or paperwork[14].

There are a few features you can expect to find in an ergonomic backpack that might not be available with standard styles[16].

Tips for Choosing and Using Backpacks are as following:

Consider the construction. Before you grab that new bag off the rack, make sure it is got two padded straps that go over your shoulders. Backpacks with multiple compartments can also help distribute the weight more evenly.

Carry it well. Before you load your backpack, adjust the straps so the pack sits close to your back. Wear both straps over your shoulders. If your pack is really heavy and you can not get around the number of books you need, take some of the books out of your pack and carry them in your hands.

Try a pack with wheels. Lots of kids use these as an alternative to backpacks, but there are guidelines and considerations to keep in mind with this kind of pack.

Plan your homework. Plan ahead and spread your homework out over the course of the week so you will not have to tote all your books home on the weekend.

Limit your load. Doctors and physical therapists recommend that people carry no more than 10% to 15% of their body weight in the

ir packs. This means that if you weigh 120 pounds, your backpack should weigh no more than 12 to 18 pounds.

Pick it up properly. As with any heavy weight, you should bend at the knees when lifting a backpack to your shoulders[16].

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