Choosing a Backpack and Related Equipment

Physiocare Physiotherapy & Rehab Centre's guide for selecting Backpacks

We recommend a few general considerations for selecting your backpack in order to protect yourself and minimize injury while hiking, walking, or simply commuting to school or work. Other related equipment, such as proper shoes as well as walking/hiking poles should also be considered if you are using your backpack with a heavy load, very frequently, or for long distances.

Backpack

The best way to find a backpack that is best for you is to get to a store to check some out! The exact type of backpack to choose really depends exactly on what you will be using the pack for. A knowledgeable store expert is essential to have close-by when you are choosing.

By actually looking first-hand at a number of packs you can ensure that they have enough storage room and compartments for what you require, and you can also try the packs on for general comfort. Remember, however, that an empty backpack in the shop will feel a lot different on your back than one filled with heavy textbooks, a computer, hiking water bottles, or any other important goods you may be carrying. For this reason, it is wise to ask the store attendant for a few heavier items to be placed in the pack to simulate added weight for when trying the pack on.

The number of compartments in the pack is also important. Not only do you need to ensure that there are enough compartments to fulfil your purposes, but by ensuring your pack has several separate compartments the weight of the backpack can be more evenly distributed, which can help to prevent muscle strain.

For hiking any distance an internal backpack frame is essential, as it will bear some of the load of the pack. For some individuals an internal frame may also be useful even if you are just using the pack for daily work or school purposes. The internal frame should be well padded so the frame itself does not put pressure on any part of your back. . Padding on the portion of the pack that rests on your back is also useful in order to avoid items within the pack from poking into you when the pack is on. In addition, well-padded and relatively thick shoulder straps are necessary to also help distribute the weight of the pack.

Both chest and waist straps are essential components for hiking backpacks, and they are also highly recommended components on any other type of pack. A chest strap, in particular, is extremely useful even for work or school backpacks in order to distribute the weight of the pack and keep the load close to the back. Compression straps on the outside of the pack, which are used to tighten up the contents inside, are

also essential on hiking packs and also very useful on any other type of pack. Not only can some items be strapped to the outside of the pack with the compression straps in order to help distribute weight (ie: sleeping bags, shoes, water bottles, etc) but by tightening these straps once the pack is full it helps to keep the contents of the pack close to your back, and therefore puts less leverage force on your back and body as a whole.

The weight of the empty pack will vary depending on what you need the pack for, but in all cases, you should be looking for a lightweight material such that the pack itself does not add significant weight to your load. Again, the expertise of the store attendant will be extremely useful regarding this component. In addition to being a lightweight pack, reflective tape or bands are useful as a pre-made element of the pack (for visibility purposes), but can be added later if they are not already part of the original manufacturing.

The width of the pack should be no wider than your body in order for your body to be able to manage the load. This is particularly true in school-aged children whose torso width may be narrow; it is crucial to ensure the pack they carry is also narrow! The height of the backpack is also important. The length of your torso rather than your overall body height is the important component to consider here. Your torso length is measured from the base of your neck to an imaginary line across the top of your hip bones. Once you have measured your torso length, check the backpack manufacturer's guide to determine which size of their pack is recommended for your torso. Keep in mind that it is still best to try the pack on for comfort especially if your individual torso size is on the cusp of one of the recommended manufacturer's sizes; in this case try on both sizes of packs to ensure you choose the best feel and fit for your body type.

Unfortunately, choosing the best backpack for your needs is only half the battle when it comes to backpacks and preventing injuries. The second half is packing the pack properly along with wearing it correctly. In order to prevent injury, backpacks should be no more than 10-15% of one's body weight. This means that for a child who may only weigh 30kg/65 lbs, their backpack should only weigh at absolute maximum 4.5kg/10 lbs. That is only about the weight of two jugs of milk. Unfortunately many small children carry packs much heavier than this, which often leads to an acute or chronic injury, or can lead to poor prolonged posturing as they struggle to carry the overloaded pack.

In order to lighten the load in any pack, carry only essential items necessary for the day or the trip. Remember that water or other liquids are heavy so carry only what is necessary. In the case of school-aged children, it is wise for the parent to regularly sort the contents of the pack to ensure that only necessary items are being hauled to and from school. If possible, it is wise to purchase a second set of textbooks or supplies to leave at home in order to minimize the need to drag items to and fro. If heavy items do need to be carried regularly it may also be wise to purchase a day pack which has wheels to pull the pack as an added feature.

Packing the items into your pack properly can also make an enormous difference in regards to distributing the weight of the pack, taking the load off of the body, and preventing injury. As mentioned previously, the separated compartments should be used in order to evenly distribute the weight of the items. Pack the heavier items so that they will be sitting low in the pack and distribute them along the portion of the pack that will sit next to the spine.

When wearing the pack, NEVER use only one shoulder strap as this places all the weight of the back onto one side of the body and causes the body to rotate in order to accommodate the heavy load. ALWAYS use both shoulder straps and set them firmly over the flattest part of your shoulder. Also, ensure there are no twists in your shoulder straps when wearing them in order to allow the straps to properly distribute the weight. Always use the chest strap and waist/hip straps when available and tighten well enough such that the weight of the pack is pulled in close to your body. The chest strap should sit on the flat part of your

upper chest below the collar bone and well above the nipples. The waist strap should sit above the hip bones but should not rub on them. If the pack has padded hip straps, they should rest on the top of the hips, not slide below them or sit up in the low back. If you loosen the shoulder straps, you should feel the weight of the pack rest on the hips via the hip straps. If you don't have hip straps, the weight of the pack should feel like it sits near the lower to mid back rather than the upper back.

When putting on your loaded backpack, ensure that the pack is in front of you and that you bend your knees and waist to get down to the pack rather than bending forward from your waist. Once in this position, use your legs and buttocks to lift the pack up as you stand up. Keep the pack close to your body as you slide it around to your rear and up onto your shoulders. Try to avoid twisting when putting on the pack. Whenever possible it is useful to have someone else help you put your loaded backpack onto your back. In the case of hikers, a fellow hiker can hold your pack on a picnic table while you put it on. For school-aged children, a parent is wise to lift and hold the filled backpack up for their child and allow their child to back into the shoulder straps rather than the child lifting the pack themselves and swinging it around onto their back.

It is good to be reminded to use good posture at any time, but particularly when there is added weight on your back in the form of a backpack. Stand and walk with good upright posture and adjust your pack so that you can do so. In addition, whenever possible take frequent breaks where you either take the pack off completely or rest with the pack on by supporting the weight of the pack from behind on something such as a table or the edge of a counter.

Lastly, as many backpack related injuries are not due to wearing a backpack but rather to tripping over one or being hit by one, be sure that once you take your pack off, that you place it down well out of the way of others. In addition, be conscious of the pack on your back when in crowded areas and leave ample room to move about.

Shoes

There are obviously no specific shoes one must wear when using a backpack but you should be sure to take into consideration the shoes you are wearing if you are regularly carrying weight on your back. For hiking, of course, specific hiking boots or walking shoes would be recommended, and the expert advice of a local salesperson would be highly regarded.

The extra weight of a backpack, even if it is mere kilos, does transfer pressure down the anatomical chain into your back, hips, knees, ankles and feet. If you have any pre-existing injuries in your low back or lower extremities then adding any weight to your body by wearing a backpack can accentuate your original problem or make you prone to developing a new injury. For this reason, when wearing a backpack, it is recommended that you wear good shoes at all times (or as often as possible) in order to decrease the stress on your back and lower limbs. Shoes should have a durable and shock absorbing sole that is relatively thick. Well-fit running shoes are the best option for city walking or commuting to or from work or school. Try best to avoid shoes with heels, flat fashion shoes, court-type sport shoes, or thongs particularly if the weight of the backpack is fairly heavy or you are walking a long distance. A good idea is to wear your walking shoes when getting to or from your destination and to carry some lightweight shoes you can change into once you arrive and remove your pack.

Overall comfort and a snug fit of the shoe is extremely important: if your shoes are too big you will quickly end up with blisters, and if they are too tight, you will experience pain and bruising in your toes and toenails. Due to the weight of a backpack added to your own body weight, inappropriate shoes can cause problems quickly so it is worth investing in proper footwear.

Alongside good shoes comes the need for good socks. Ensure the socks you wear are of a lightweight and breathable material and that they fit snugly. If you are prone to blistering then wearing two pairs of socks can help to reduce the friction on your skin, which creates the blister. The double pair of socks encourages the friction to occur between the two layers of material instead of between the sock and your skin. If you do develop an area of potential blister soreness (a hotspot), it is crucial that you treat it straight away. Immediate treatment can avoid a blister developing and save walking long distances in pain. Replace your shoes regularly to maximize the support they give you; any visible smoothing of the sole or wearing through of the toe end means it is time for a new pair.

Walking/Hiking Poles

Although not essential, walking/hiking poles are highly recommended when wearing a backpack particularly if you are walking long distances, doing a lot of hiking or hill walking, or have existing knee or ankle injuries.

Hiking poles reduce the strain on the body particularly when walking downhill. When walking uphill they also transfer some of your body weight to your upper limbs. In addition to taking some of the body load, hiking poles also increase your overall stability when walking and can help to decrease the incidence of falls.

Hiking poles vary widely in their price and in their quality therefore the type of walking or hiking you will be doing will determine which poles would suit you best. Once again, the in-depth knowledge of a sporting expert in your area would be invaluable regarding the benefit of walking poles for your individual situation.