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## A Beginner Flute To Suit

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Playing related injuries among musicians, including flautists, have been widely reported in the literature. (i) While a clear link has not been established between early teaching and later manifestations of pain, it is reasonable to assume that placing the neck, shoulders, hands, or back in awkward positions for extended durations, especially over a period of years, may result in cumulative trauma (overuse/repetitive strain) injuries. (Dawson, 2008, p.24) states "Physical problems can and do occur in young musicians...Several published studies have documented the incidence of overuse difficulties in students, even those as young as seven or eight years of age – long before they might have any clue or insight into the cause of their problem or what to do about it."

Injuries among flautists may be caused or aggravated by unnecessary muscular imbalances, or postural flaws in playing. While a perfect position for the body may not be achievable in a unilateral stance, flute players can aim to optimize the way they hold the flute, resulting in both musical and physical benefits. There are various ways the postural issues can be addressed, but this article will specifically investigate how teachers, band conductors and parents can make informed choices about which flutes will be most suitable in achieving the optimal physical set up for the beginner flautist.

Ergonomics specialists make the following recommendations, which could readily be applied to flute playing:

- avoid excessive reaches;
- hold loads close to the body;
- keep the joints in neutral position (normal anatomical alignment);
- limit the duration of any continuous muscular effort;
- prevent muscular exhaustion; and
- take account of differences in body size

(Dul & Weerdmeester, 2008, pp. 5 – 19)

One effective way to apply these principles, and avoid poor playing positions, is through the choice of appropriate instruments at different stages of the child's learning. Typically, the arms and shoulders of young beginner flautists tire quickly during playing, so a neck tilt to the right is commonly seen. As the weight and length of the instrument is large compared to their body size, beginners often raise their shoulders as they lift the flute, or even rest their chin on their left shoulder in order to hold the flute up more easily. This can be seen in the following de-identified photograph from a primary school rehearsal.

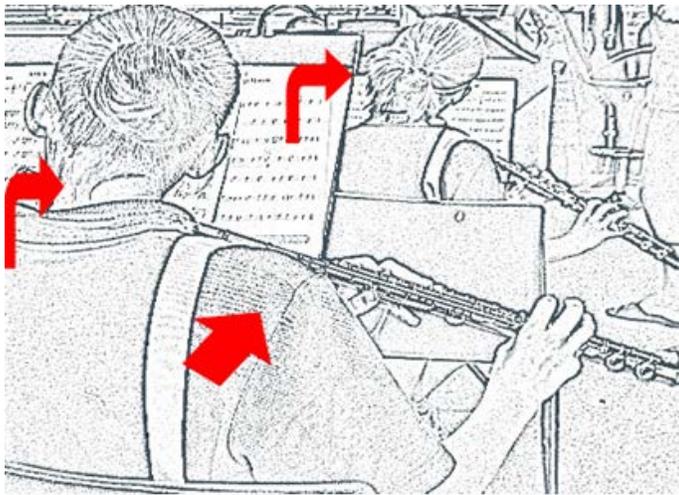


Figure 1: Young flautists during a school rehearsal, with necks tilted and raised right shoulders.

Such problems may be diminished or even alleviated if working with a more appropriately sized instrument. Young string players have long had access to small versions of instruments, including 1/16, 1/8, 1/4 and 3/4 sizes. Children of the same age play full sized flutes, sometimes even B-foot models. Dawson (2008, p. 25) states that "Physical mismatches between the musician and instrument can also cause difficulties, and music teachers must make sure that students have a properly sized instrument."

In addition to the standard flute, there are several choices available for those seeking ergonomic alternatives for beginners. One example is the plastic Yamaha Fife, which uses the same fingerings as the flute. Its limitation is not having a full chromatic range however it is ideal for teaching sound production, and simple tunes, without the strain of holding up a heavier flute. The fife and its accompanying tutor book are reasonably priced. Author, Liz Goodwin (personal communication, October 22, 2007) commented:

"One of the main reasons I developed the Fife Book and only use the fife to start people playing was due to physical problems. I'm frequently stunned when I see youngsters being allowed to stand or sit so badly - if a physical education teacher allowed kids to put incorrect pressure on their bodies they would almost certainly be out of a job - but flute teachers do it constantly!"

Dr Shelley Collins, Assistant Professor of Flute at Delta University starts most of her beginners on the Yamaha fife:

"By beginning on the fife, students are able to learn to read music, to use real flute fingerings, and to create a strong embouchure without the difficulty of trying to hold and balance a flute. When students eventually switch to the flute, I have found that they are able to start on an open-hole instrument with little difficulty and experience success almost immediately. This is also an inexpensive way to avoid "rent to own" instrument plans, which are seldom financially advantageous to parents." (Collins, S., 2009)

Flute educator Kathy Antill, agrees the fife is "excellent for introducing some basic skills which later can be used with the flute. Some of these skills include forming a relaxed and flexible embouchure, having a good hand position, developing finger coordination, producing a clear sound and introducing tonguing." (Antill, 2009) Australian flute examiner Denise Collins, taught students the Yamaha Fife, mostly to students aged 7 – 8 years, for over 15 years: "Most times the students spent approximately one year on fife before graduating to the flute, or other instruments...It certainly gave a very strong foundation for learning the flute and I have noticed a much greater ability in fife students to create a lovely, full tone on flute at a much earlier stage." (Collins, D., 2009)

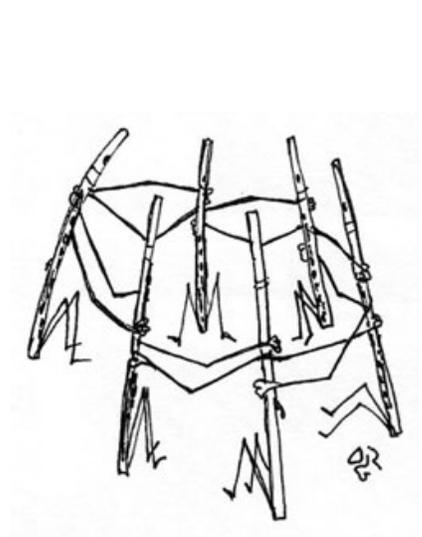


Figure 2. Yamaha Fife

### Head Joints

Though the flute has traditionally been a straight instrument, flutes with curved heads have been developed to address the ergonomic principle of keeping the load closer to the body. Some are sold with a straight head as well, allowing a progression when the teacher determines that the child is physically ready. The extra cost of the curved head is an investment in the child's health, which may ultimately save on physiotherapy or medical bills. A disadvantage may be that some children feel embarrassed to play a flute that looks different, as surveyed flute teachers reported recently (Lonsdale, 2009):

"I have trouble getting my young students to stay on their curved head joints... Seems to be an image problem when they see other students playing the full length flute. I explain the benefits for the health of their spine and



sometimes the parents will support and enforce that at home.”

“I did encounter a parent who was clearly very, very concerned with appearances and image and conforming. Outright refused to consider buying a curved head joint for her very small 10 year old, saying all the while that it was the daughter who didn't want it. Yet in the lesson the daughter was eager to try a curved head joint that I had borrowed and delighted in how easy it made things for her and how her sound improved.”

### Foot Joints

It is appropriate for students to commence on a C or D-foot joint, as the B-foot joint adds extra length and weight, which may be more difficult for a small child to hold. D-foot flutes, such as the Jupiter Prodigy, have a curved head, but no C or C# keys. As few beginners would be using low C/C#s in the first few months of learning, this flute is particularly suitable for young or small beginners. An obvious disadvantage is the need to upgrade early, because the D-foot is fixed to the body, but the D-foot flute could be a good choice for the first year of primary school band programs.



Figure 3 (Top to bottom): D-foot flute; curved student flute; C-foot flute; B-foot flute.

### Open or Closed-Hole?

Most beginners start on closed-hole flutes because the keys are easier for small fingers to depress. If a student is learning on an open-hole flute, the use of plastic plugs should be considered in all or some holes until the child's fingers are big enough to cover them, to avoid straining. The transition to open-holes usually occurs at the intermediate to advanced level, on the advice of the flute teacher.

### Quality Instruments and Servicing

The importance of a well-maintained, quality instrument should not be underestimated. Some parents may buy the least expensive instruments because of budgetary limitations and not knowing if the child will show enough commitment to justify the outlay. However, buying a poor quality instrument may result in the child having to press keys harder to make a reasonable sound because of pads not sealing correctly. This potentially creates excess muscle tension, not to mention the mental frustration of having difficulty producing a quality sound. Goodwin (1995, p.24) states:

"Frustration soon set in and the children began to fail. I saw this happening time and time again. The main reason? School flutes and no money to repair them, even if they were worth repairing. It was patently obvious that a child soon becomes disillusioned trying to play a tune on an instrument that doesn't play below a G. It proved to be an impossible task to persuade parents to pay out money for an instrument when they knew an instrument was available in school. The prevalent attitude was 'anything is good enough to start on and if she gets better we'll think about one for Christmas'. Christmas often brought a badly maintained, second, or third hand instrument, worse than the child had already been struggling with."

Flutes should ideally be serviced by a qualified repairer at least once per year. Bumping or dropping the flute may cause the mechanism to be less stable, and therefore more difficult to play. Parents and schools are strongly advised to take advice from a specialist flute teacher before buying flutes, and not to jump into a purchase, simply because an instrument may be inexpensive. David Leviston (2008, p.13) advises:

"You may buy a cheaper brand and "save" several hundred dollars, but you will probably get something which either will not work well, will probably need fine tuning or at worst may not be worth fixing or spending any further money on and therefore you will end up spending more...the main consideration is that the keys, pads and mechanism are so precisely made that no leaks occur. If there is a leak, sometimes even just the thickness of a hair, as much as 10 – 20 % of sound loss can occur. Consequently the design, materials, and adjustment are critical. The person learning or playing needs to know whether it is the instrument or them that needs improving."

### Conclusions

"By whatever means are available, information and support should be afforded to teachers and parents, who

play a critically important role in the growth and development of musicians during their learning years."  
(Spaulding 1988, p. 135)

Schools, teachers and parents have in their hands an enormous responsibility to choose instruments which give young flautists the best chances of avoiding injuries, to assist in developing playing habits based on sound ergonomic principles. Preventative measures can and should be taken to ensure that today's young musicians enjoy making music for many years to come. This article has presented a range of instrument specific factors that should be considered for beginners, in order to prevent or limit overuse or strain related injuries.

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(i) (Brandfonbrener, 1991); (Fishbein et al, 1988); (Fry, 1986, 1988); (Guptill, 2000); (Lonsdale, Report on International Flute Survey on Injury Prevention and Management , 2009); (Nemoto, June 2007); (Spence, 9/2001)



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