Back pain, one of the principal causes of occupational disability in the dental industry, is often attributed to poor posture, usually occasioned by an incorrect working position. The traditional sitting position adopted by dental professionals can have an iatrogenic effect on the spine, which in turn causes vertebral problems, often in the lumbar region. Constant bending or twisting also contributes to back problems.

While it has always been accepted that the patient must be comfortable and relaxed during treatment, the comfort of the dental team has often been overlooked.

A recent industry survey of musculoskeletal (MSK) disorders among dental professionals found that between 64 and 93 per cent of the respondents suffered MSK pain. Dentists reported pain chiefly in the back (36 to 60 per cent) and neck (20 to 85 per cent), while hygienists were most affected in the wrists and hands (60 to 70 per cent).1

It was once thought that the failure of dental equipment designers to fully understand ergonomic principles was a key contributor to a potentially damaging working posture. Today's manufacturers create solutions, which adapt to the requirements of the user, offering treatment chairs, dental units, handpieces, cabinetry and dentists' stools with safe ergonomics at the heart of their design.

Designers also take account of the dentist's need to move freely around the patient, and that access to instruments and surgery equipment must be arranged to minimise actions which could potentially lead to muscle strain.

All dentists should be aware of the two primary considerations inherent in a safe working position: comfort and possible health risks, and the appropriate and convenient positioning of equipment and instruments.

Comfort and health
Although all dentists will naturally adopt a working position which suits their own preference, physicality and state of health, a symmetrical, upright posture that does not over-load the musculoskeletal structures or put added stress on the spinal column is the recommended ideal.

Some movement around the treatment chair is inevitable, but remaining as much as possible behind the patient's shoulder will help to avoid twisting of the upper body and neck. Making many small movements during treatment will further reduce the risk of muscle strain. It is also impor-
tant to vary the chair height to keep the working site at a comfortable distance.

Positioning and suitability of equipment and instruments

The dental unit, and ancillary equipment and its positioning, should complement the physical characteristics as well as the occupational requirements of the dentist; the dentist should not have to compromise posture or comfort for the sake of efficiency. Equipment options should be available so that clinicians can tailor their equipment to meet their individual needs.

The treatment chair/unit is the heart of every surgery, and the best designs satisfy the patient's comfort, functional requirements and the comfort of the dentist. Chairs should feature a thin, narrow back to avoid unnecessary leaning over the patient while allowing easy access to the working area. Leading manufacturers include design features which provide added support for the patient without compromising the dentist's access.

The latest chairs offer a wealth of extra features and may incorporate innovative concepts such as intuitive instrument replacement and built-in control panels. Hanging tube storage systems are proving popular, combining immediate access to instruments with convenient placement when not in use. More advanced options include ingenious extendable trays on articulated arms which can be positioned almost anywhere around the patient to provide maximum comfort and efficiency for the clinician.

Many models of dental unit are designed in a way that dictates the positions of the dental team, but ideally the team should be adaptable to suit their own working style.

Dentists today should expect their chair to be an ergonomically functional treatment platform which offers all the features they need to deliver high quality care and which also provides for a balanced working posture to safeguard their own long term health.

Second only to the chair, the handpiece is probably the most frequently used item in the surgery. With its almost ubiquitous application across a wide spectrum of treatments, versatility and longevity are vital influences when making the choice.

The other fundamental tools of the dentist's trade, in constant use, including suction, pliers, forceps, mouth mirrors and scalers all need to be positioned where their accessibility will promote a better posture.

References