

lying this protective action may be its ability to increase the expression of neurotrophic factors that are known to promote survival of dopaminergic neurons.⁹ But tobacco contains numerous other chemicals whose influence on biological processes may play a part. Smoking causes a reduction in activity of monoamine oxidase A and B, for example, which might protect against neuronal damage by inhibiting the enzymatic oxidation of dopamine.¹¹

One unachieved goal in the treatment of Parkinson's disease is preventing it getting worse. If, as the epidemiological evidence implies, caffeine and nicotine are neuroprotective, some of the new pharmacological treatments currently being developed, such as adenosine A_{2A} receptor blockers and nicotinic agonists, might not only improve symptoms but slow the relentless progression of the disease.

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Massage treatment for back pain

Evidence for symptomatic relief is encouraging but not compelling

Throughout history different forms of massage treatment have been used in all medical cultures to alleviate a wide range of symptoms. This article focuses on the most common form, classic muscular (Swedish) massage, as a symptomatic treatment for back pain.¹ It will define the therapeutic modality, review the evidence for or against effectiveness and safety, and discuss possible mechanisms of action as well as the problems of conducting research in this area.

Swedish massage is a touch therapy that uses a range of techniques to manipulate the soft tissues of the body: effleurage (slow rhythmic stroking), kneading (circular compression), petrissage (forceful skin rolling), friction (penetrating pressure from the fingertips with circular or transverse movement), tapotement (percussive movements), vibration (trembling movement of both hands).² In most English speaking countries, massage is seen as an alternative or complementary treatment,³ whereas on the European continent it is considered a conventional treatment, particularly for back pain. In Austria, for example, 87% of patients with back pain receive (and are usually reimbursed for) massage treatment.⁴

A recent Cochrane review of massage treatment for back pain summarised five randomised clinical trials on the subject, three of which were of high methodological quality.⁵ One study compared massage with detuned laser therapy as placebo, and the other trials compared massage with various other physical treatments such as acupuncture or spinal manipulation. The review shows that massage is superior to placebo, relaxation treatment, acupuncture, or self care education; inferior to manipulation, shiatsu, or

transcutaneous electrical stimulation; and no different from treatment with corsets or exercise. The benefit lasted at least one year. The authors concluded that massage "might" be beneficial for subacute and chronic non-specific low back pain.⁵ In a further relevant trial, patients with "non-inflammatory rheumatic pain" (not just back pain) were randomised to receive either 10 sessions of classic massage or usual medical care for five weeks.⁶ By the end of this period, both groups had improved similarly, and at three months' follow up more pain relief had occurred in the massage group.

These studies are not easy to interpret. Some are methodologically weak; most used control interventions with uncertain effectiveness; some tested massage other than Swedish massage; some allowed concomitant interventions; and one trial⁶ was not conducted exclusively on patients with back pain. Back pain is not a disease entity but a symptom, and future studies should aim at determining whether certain types of patients respond better than others. The overall picture that seems to emerge implies that the evidence for massage as a symptomatic relief of back pain is encouraging but not compelling.³ Similar conclusions would be reached if one looked at other conditions for which massage has been tested in controlled clinical trials.³

Most massage therapists are convinced that massage treatment is free of risk. This is not true. Too much force can cause fractures of osteoporotic bones; and even rupture of the liver and damage to nerves have been associated with massage.⁷ These events are rarities and massage is relatively safe, provided that well trained therapists observe the contraindications:

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phlebitis, deep vein thrombosis, burns, skin infections, eczema, open wounds, bone fractures, and advanced osteoporosis.³

If massage is effective, how does it work? The mechanical action of the hands on cutaneous and subcutaneous structures is believed to enhance circulation of blood and lymph resulting in increased supply of oxygen and removal of waste products or mediators of pain.⁸ Certain massage techniques have been shown to increase the threshold for pain⁹ and reduce muscular tone.⁸ Most importantly perhaps, a massage can relax the mind and reduce anxiety, which may affect the perception of pain positively.¹⁰ None of these mechanisms is well studied at present.

Despite the long history of massage, research into this subject is still in its infancy. This may have several reasons. This area shows a distinct lack of research culture because therapists' time is costly—massage therapists in the United States charge on average \$63 (£40; €58) per session,¹—clinical trials are expensive, and very few research funds are available. Rigorous trials also face formidable methodological difficulties—what, for example, is an acceptable placebo? How can we blind patients? Exotic difficulties can originate from unexpected sources as readers of an Australian publication recently found out when they read this statement: “The Committee for Separating Massage Therapy from Prostitution has been lobbying the South Australian government not to allow sex workers

to advertise themselves as massage therapists.”¹¹ Placebo controlled double blind trials may not be possible, yet randomised clinical trials are clearly both feasible and desirable in view of the promising data from trials.¹²

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Fifth international congress on peer review and biomedical publication

Call for research

We have now held four peer review congresses at four year intervals, and their success is shown by the stimulus they have given to an evolving science—investigation of the process whereby scientific work is selected and published.¹⁻⁴ Since the announcement of the first peer review congress in 1986, the numbers of abstracts submitted to successive congresses have increased from 50 to 110, 160, and 180, respectively. We have noted similar increases in the number of Medline citations on peer review, which since 2000 have averaged 170-200 per year.⁵

We now announce that the fifth international congress on peer review in biomedical publication will be held in September 2005, in Chicago, Illinois, where the first two congresses were held in 1989 and 1993. This congress, organised by *JAMA* and the BMJ Publishing Group, will feature three days of presentations of original research. As before we urge scientists, editors, publishers, and readers who are interested in the processes by which science is published to get going on their research.

Topics of interest include those listed in the box. Abstracts on any aspect of editorial peer review and its role in scientific publication and exchange of information will be considered. Abstracts that summa-

Topics of interest for the fifth peer review congress

Mechanisms of peer review and editorial decision making
 Evaluations of the quality, validity, and practicality of peer review and editorial decision making
 Online and web based peer review and publication
 Prepublication posting and release of information
 Quality assurance for reviewers and editors
 Authorship, contributorship, and responsibility for published material
 Breakdowns, weaknesses, and biases
 Conflicts of interest
 Scientific misconduct
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 Economics of peer review and scientific publication
 Evaluations of the quality of print and online information
 Methods for improving the quality, efficiency, and equitable distribution of biomedical information
 Interactive digital systems and other new technologies that affect the dissemination of biomedical information
 The future of scientific publication