

The Association of Smoking and Low Back Pain

The hazards of cigarette smoking are well documented. Cancer, emphysema and heart disease are some of the most common complications. In an effort to further investigate the risks of smoking, low back pain has been studied to determine if a relationship exists between cigarette smoking and low back pain. Finding this correlation not only assists cigarette smoking research, but those interested in low back pain studies. The two questions that must be addressed are:

1. Does a relationship exist?
2. If a relationship exists, what is the basis for that relationship?

This paper will attempt to review the recent literature and illustrate the beliefs that exist today.

To construct an effective analysis of the present research, it is necessary to include some aspects encompassed in the recent literature. The studies on the subject can be classified into two types. The first attempts to discover a direct relationship between smoking and low back pain; the second is low back pain causes in which smoking commonly appears to be a risk factor. When a link is made, three common themes are repeatedly addressed:

1. Is there a relationship between smoking and low back pain?
2. Is there a relationship between the number of cigarettes smoked and low back pain?
3. Is there a relationship between smoking and the duration of low back pain?

When the literature is analyzed to find a positive relationship between smoking and low back pain, the majority of the research appears to agree that a link exists. The debate begins when deciding what is the association. For example, in a study by Leboeuf-Yde, et al., they found there to be a relationship between smoking and low back pain but questioned whether this relationship was causal or incidental.¹ More specifically, was it a direct link to the smoking, or was it related to habits associated with smokers? It has been suggested that complications of smoking such as lung capacity and coughing could directly effect the low back.¹ This would be consistent with the theory of a causal relationship. A most recent study in the *British Medical Journal* sites that a more incidental relationship should be drawn, the argument being that the lifestyle of a smoker puts him or her more at risk for low back pain.² In actuality, the relationship is probably a little of each. A common theme echoed in much of the literature is that more research is needed to differentiate between the cause.¹⁻⁵

If we assume simply that a relationship does exist, then one must investigate if there is a correlation between the number of cigarettes smoked and low back pain. In this area of study, the data appears to be much stronger in illustrating a significant association, and clearly shows that with increased cigarette consumption, there is an increased association with low back pain.^{2,3,6} It is believed that with the increased cigarette consumption, the factors involved are direct and indirect causes.⁶ Another more modern theory suggests that not only is low back pain involved, but also system-wide body pain.⁶ To summarize; the increased cigarette usage has a direct effect to the body and can also be linked to morbidity factors that would also lead to low back pain risk factors. These are described as physiological stress, poor diet, low physical activity and low job

satisfaction.²

The last area of interest is the duration of low back pain in association with cigarette smoking. Once again, there is strength and consistency within the recent literature. The data suggests a positive relationship between cigarette smoking and low back pain duration.^{2,3,7} There are a few theories as to why this relationship exists. The first is that patient compliance is much lower in patients who smoke.³ The compliance issue also appears to become worse with the increase in cigarettes smoked per day.³ Another theory contends that smoking affects the body system-wide and diminishes its ability to heal.^{6,7} Once again, the net effect is probably a combination of both. Regardless of its origin, there is little doubt that low back pain is more likely to become a chronic problem with the use of cigarettes.

In conclusion, the research does appear to illustrate a relationship between smoking and low back pain. While an exact link cannot be established, the association between the two cannot be ignored. It would be hasty at this time to characterize the data as conclusive, but it does enhance the argument for continued studies and warrants any doctor's recommendation to discontinue the use of cigarettes.

References

1. Leboeuf-Yde C, Yashin A, Lauritzen T. Does smoking cause low back pain? Results from a population-based study. *Journal of Manipulative and Physiological Therapeutics*, 1996 February;19(2):99-108.
2. Thomas E, Silman AJ, Croft PR, Papageorgiou AC, Jayson MI, Macfarlane GJ. Predicting who develops low back pain in primary care: a prospective study. *British Medical Journal*, 1999 June; 318(7199):1662-7.
3. Scott SC, Goldberg MS, Mayo NE, Stock SR, Poitras B. The association between cigarette smoking and back pain in adults. *Spine*, 1999 June 1; 24(11):1090-8.
4. Leboeuf-Yde C. Smoking and low back pain. A systematic literature review of 41 journal articles reporting 47 epidemiologic studies. *Spine*, 1999 July 15; 24(14):1463-70.
5. Levangie PK. Association of low back pain with self-reported risk factors among patients seeking physical therapy services. *Physical Therapy*, 1999 August;79(8):757-66.
6. Anderson H, Ejlertsson G, Leden I. Widespread musculoskeletal chronic pain associated with smoking. An epidemiological study in a general rural population. *Scandinavian Journal of Rehabilitative Medicine*, 1998 September; 30(3):185-91.
7. Leboeuf-Yde C, Kyvik KO, Bruun NH. Low back pain and lifestyle. Part I: Smoking. Information from a population-based sample of 29,424 twins. *Spine*, 1998 October 15; 23(20): 2207-13.

Lance A. Casazza,DC
Sacramento, California

NOVEMBER 2001