A group of researchers at America's National Institute of Mental Health (NIMH), in Bethesda, Maryland, has just given a new significance to the old Latin tag *mens sana in corpore sano*. They recently reported in the *New England Journal of Medicine* that it is true—or at least likely—that an unhealthy mind can lead directly to an unhealthy body. Specifically, they found that clinical depression may be linked to broken bones. This is not because depressed people are more accident-prone, but because their bones are weaker. David Michelson and his team measured the bone-mineral density in 24 women suffering from major depression, or with a history of it, and compared this with the density in 24 healthy women of similar age, size, weight, menopausal status and race. The team found that bone density in the depressed group was somewhat lower all over the body—and up to 14% lower at the neck of the femur (the thigh bone). This means that, according to standard measures, these women face a significantly greater risk of fractures than the population at large.

In searching for an explanation of their findings, Dr Michelson and his colleagues were able to rule out the effects of the anti-depressant drugs that patients often have to take for long periods. Instead, they believe that their results are due to an increased secretion of a hormone called cortisol. Excess cortisol production is a common feature of depression, and it has been known for some time that high cortisol levels can lead to decreased bone density. Dr Michelson's result is not the first to link mental state with physical well-being. Stress, for example, appears to affect the immune system adversely. Indeed, links between the mind and physical disease are now widely accepted, and disciplines with unwieldy names such as "psychoneuroendocroimmunology" (the study of the relationship between the mind, the brain, the hormones and the immune system) are emerging to look at them.

But Dr Michelson's findings are not simply a scientific curiosity. According to Philip Gold, the head of neuroendocrinology at NIMH, depression may affect as many as 9% of American women, so early treatment could improve physical as well as mental public health by reducing the risk of bone fractures. The affected women in Dr Michelson's study had an average age of 41. Their degree of bone loss, according to Dr Gold, was that of 70-year-olds.