The higher SBF over the sacrum we found using the LDI method, is consistent with the hypothesis that regions of higher resting blood flow (BF) may be at greater risk of injury when exposed to external forces that cause a substantial reduction in this resting BF. The relative importance of this finding, compared to other factors that predispose to sacral pressure ulcers has not been investigated, but it is useful to speculate. The average resting sacral SBF among persons we studied varied by about 1.7 times. It is likely that patients, who have varying superimposed conditions that affect skin BF, would also have such person-to-person differences in sacral BF.

A relevant question is whether resting flow variations among patients represents a factor that influences sacral ulcer predilection. For similar sacral loading conditions, it almost seems counter-intuitive to expect that a person with a higher resting BF would be more at risk for a sacral ulcer than one who has a lower BF.

But, it may be argued that if resting BF is reduced to near zero for a sufficient duration, then the relative deficit is greater in person with higher resting flow. If BF is then restored by offloading the sacral forces, either mechanically, as with pressure relief surfaces, or by turning the patient, the deficit needs to be restored over an extended period.

For persons with higher resting BF, this response needs to be more vigorous and sustained. A different factor, as to ulcer risk, may then be whether a suitable amount of hyperemia can occur. The findings indicate that a substantial flow reserve is normally present in the sacrum. Based on the localized heat responses, a peak hyperemia that was about 3.5 times the resting SBF was observed.

But, there are at least two broad categories to consider. One is the category in which vasodilatation capacity is blunted due to vascular deficits. This includes persons with diabetes, the aged and those with diuretic treatment. The other category includes persons who have had an abnormal increase in resting BF due to prior bed lying, skin hydration, and skin conditions such as localized irritation. These persons may have a vasoconstrictor BF capacity that is adequate to meet their normal resting treatment needs following intervals of SBF deprivation, but it may not be adequate to meet the imposed increased BF demands. Based on these considerations, it seems to be prudent to consider the role of resting BF as an added risk component and to consider factoring this concept in to patient care strategies. More investigative work is needed to provide direct evidence.