

Q8: Since whole body phototherapy machines have bulbs on 4 sides, does that prevent any shadows that would usually be caused by one sided light?

A: Whole body phototherapy cabinets, as typically found in phototherapy centres, have long fluorescent tubes which fully surround the person inside the cabinet. The purpose is to illuminate all body surfaces of the cabinet occupant at once, although there will still be shadows where the light cannot reach (see image from *Diffey BL, Harrington TR, Challoner AV. A comparison of the anatomical uniformity of irradiation in two different photochemotherapy units. Br J Dermatol 1978; 99:361–3* and *Moseley, H. et al. (2015), Guidelines on the measurement of ultraviolet radiation levels in ultraviolet phototherapy: report issued by the British Association of Dermatologists and British Photo-dermatology Group 2015. Br J Dermatol, 173: 333-350. doi:10.1111/bjd.13937*).

A single flat bank of tubes can only treat one side of the body surface at a time, in other words when the front is being treated the back (and to a certain extent the sides of the body) are in shadow. However this is overcome in one-sided light sources by repeating the treatment with the patient rotated. Therefore if you assume the body has four surfaces (front, back, left side and right side) the treatment would be repeated four times with a different side facing the tubes each time. This means that a single side of tubes would take four times as long to deliver the treatment as a full body cabinet.

Sometimes a single side of tubes is appropriate and such systems are used for self-administration and in home phototherapy. These systems are more compact, can be easily moved and stored and are much cheaper than a full phototherapy cabinet. Therefore both types of system have their pros and cons, it depends upon the needs of the phototherapy provider.