**PIGMENTARY DEMARCATION LINE**

**WHAT ARE PDLs?**

*Pigmentary (Pigment means color) demarcation lines or PDLs*, also known as Futcher's lines or Voigt's lines, are physiological (natural) abrupt transition lines from areas of deeper skin color to areas with lighter color. These are sharp demarcation lines that occur on different parts of the body. They have been considered as an atavistic (ancestral) remnant, where the back skin is pigmented more than the front, providing better protection from the sun. Knowledge about normal variations in skin color is needed to understand abnormal skin discolorations.

Pigmentation is generally perceived as an adaptation response of humans to environmental conditions, especially ultraviolet rays. Skin pigmentation shows interesting variations in a single race or in an ethnic subpopulation. The natural color of a person’s skin also differs in a race, females having a lighter color than males. The distribution of melanin (the molecule responsible for human skin color) is also uneven in a given race, for e.g. in Europeans the upper thigh is the darkest and the lower back, the lightest area. Some darkly pigmented areas are regarded as normal, such as the genital area, the elbows and the knees, the knuckles and in many, a mild degree of under eye pigmentation (dark circles).

**ARE PDLs OF DIFFERENT TYPES?**

Thus far, eight pigmentary demarcation lines have been described and categorized according to the letters A-H.

Five types (A-E) that occur on different parts of the body have been described.

- **Type A** - The most common lines, seen over the side of the arms.
- **Type B** - These appear on the legs during pregnancy and disappear after delivery.
- **Type C** - These occur over the chest, extending from the collar bone to the chest bone.
- **Type D** - These are dark lines along the backbone.
- **Type E** - These are lines of lighter pigmentation around the areola of the nipples.

Three facial patterns (F-H) have been commonly described in the skin of Indians. Their appearance is distinctive enough to be recognized as a fairly common variant of normal pigmentation in the Indian sub-population.

- **Type F** – These are dark patches that appear 'V' shaped or as an inverted cone on the side of the face in the region between the cheek and the temple. They are invariably similar and of almost equal intensity on both the sides.
- **Type G** – These are also dark patches in the same location but have two inverted cones lying in close proximity, looking like the letter ‘W’, with a faint strip of normal colour in between. Both patterns F and G show evenly diffuse pigmentation with a well defined margin which is better appreciated from a little distance.
Type H – These are two symmetrical linear bands of darker colour extending from just below the angle of the mouth to the sides of the chin. In many women there is often an additional band running just below and parallel to the lower lip.

**FEW FACTS AND FIGURES**

- 79% of female adults have at least one type of pigmentary demarcation line.
- 75% of men have at least one pigmentary demarcation line.
- Types (F-H) in the Indian population are seen more clearly in wheatish complexioned patients than in those with a very fair or dark complexion. These PDLs are seen with a much higher frequency in women (9%) than in men (0.75%).

**WHAT ARE THE CAUSES OF PDLs?**

PDLs make their appearance at or around puberty. PDL Types F-H remain unnoticed from childhood in most people only to be revealed after a triggering factor such as puberty, pregnancy, an acute illness such as hepatitis, typhoid or chicken pox, in addition to other unknown causes. PDLs may have a genetic predisposition. Facial patterns, especially Types F and G, are seen regularly in other family members like the mother and sisters. These lines remain more or less unchanged throughout life. However, they may become more apparent with advancing age. Hormonal influence has been observed. The increased occurrence of PDLs in females could be related to sex hormones. Type B PDLs have been reported over the legs during pregnancy (especially after the seventh month), and disappear after delivery. Dark circles around the eyes have been observed as an extension of PDL of the face.

**TREATMENT:**

Facial PDLs are a common cause of concern and can often be misdiagnosed. Several methods of treatment are available including:

1. Chemical Peels
2. Intense Pulse Light
3. Low level Laser Light
4. Prescribed Lightening Creams
5. Sunscreens

PDLs are managed, not cured, as they are not a disease, but a variation of the normal skin colour. The treatment strategy is to first offer lightening, followed by maintenance. However, you can leave the condition untreated.

A significant reduction in skin pigmentation is possible with available treatments. However, some re-pigmentation is noted after stopping the treatment. Facial PDLs also tend to darken with age.