

**Rule of thumb: A simple tool to estimate 1% scalp surface area**

*To the Editor:* The Severity of Alopecia Tool (SALT)<sup>1</sup> is the standard instrument for calculating scalp hair loss, which can range widely (0%-100%, none to complete scalp hair loss, respectively). Primary and secondary endpoints in alopecia areata clinical trials are derived from the SALT score, and so accurately assessing SALT scores is critically important to the proper conduct of these clinical trials.

Recently, the SALT was updated to define the scalp surface area (SSA) in 1% increments.<sup>2</sup> Such granular detail offers the possibility of accurate and precise assessment of small areas of hair loss, which has obvious value in interventional trials. A

challenge to using the updated SALT, however, is that 1% SSA involvement is difficult to estimate visually. We describe a solution for measuring this parameter.

The adult SSA is 520-705 cm<sup>2</sup>,<sup>2,3</sup> meaning that 1% SSA is 5.2-7.1 cm<sup>2</sup>. The thumbprint has an average surface area of 5.5 cm<sup>2</sup> ± 1.3 cm<sup>2</sup>.<sup>4</sup> Hence, we hypothesized that the thumb (in particular, the thumb projection) can be used as a tool for accurate measurement of 1% SSA.

Juxtaposed thumbprints were applied to a model of an adult-sized male head (Jesse Smith Head; A Pound of Flesh Inc, Hanover, MD) by 14 evaluators (7 women, 7 men). Because the thumbprint is smaller than the thumb projection,



**Fig 1.** Thumb projections can be used to estimate 1% scalp surface area (SSA). Thumb projections were placed in juxtaposition; however, because the contact surface (thumbprint) is smaller than the thumb projection, there is a space between the prints. The Severity of Alopecia Tool divides the scalp into 4 quadrants. The back quadrant (A) fits 24 thumbprints (ie, 24 thumb projections), consistent with the known 24% SSA of this quadrant. Similarly, the right (B) and left quadrants (C) each fit 18 thumbprints and the top quadrant (D) 40 thumbprints, consistent with the known 18% SSA, 18% SSA, and 40% SSA, respectively, of these quadrants. SSA, Scalp surface area.

there is space between thumbprints. A mean of 99.3 (standard deviation [SD] 4.0, range 91-104) thumbprints were required to cover the adult SSA (Fig 1, Video). Thus, a thumb projection was 1.0% (range 1.0%-1.1%) of the SSA. The number of thumbprints was mildly greater for female evaluators (mean 101.4, SD 2.2, range 98-104) than male evaluators (mean 97.1, SD 4.4, range 91-103). It is notable that the palm without fingers, which fits 15 thumbprints,<sup>4</sup> could be used to estimate 15% SSA.

Another method for accurately assessing the percentage of SSA involved with alopecia is to use a ruler to measure the dimensions of patches of alopecia and to then apply area formulas according to the shapes of the patches [eg, area of circle =  $\pi \times \text{radius}^2$ , area of ellipse =  $\pi (0.5 \times \text{long axis}) (0.5 \times \text{short axis})$ ]. Subsequently, the total area of all patches would be divided by 6.15 cm<sup>2</sup> (or 1% SSA) to determine the percentage of SSA. Unlike counting thumb projections, which can be done quickly, using a ruler and geometry could be time-consuming, not to mention that there is the possibility of introducing error when multiple calculations need to be performed.

Not only is it challenging to measure the amount of hair loss when there are numerous patches of alopecia present, the presence of variable hair density in the alopecic patches makes this assessment even more difficult. When using the thumb tool, the SSA of individual patches can be multiplied by the density of hair in each patch and then the sum taken of all patches. A simple example is a scalp with 12 patches of area equal to 12 thumb projections, each with ~50% hair loss. In this example, the SALT score is 6% (12 thumb projections, 12% SSA, multiplied by 0.50 hair density).

With the emergence of Janus kinase inhibitors for the treatment of alopecia areata, multiple large clinical trials are underway. Because the aim of these trials is to transform severe and moderate scalp hair loss into mild or no hair loss, the accurate assessment of relatively small areas of alopecia is critically important and tools to facilitate such assessment invaluable. Using thumb projections to determine the percentage of scalp hair loss is simple, especially when the area of hair loss is relatively small, and may be one such tool.

*Carlos Gustavo Wambier, MD, PhD, and Brett A. King, MD, PhD*

*From the Department of Dermatology, Yale University School of Medicine, New Haven, Connecticut*

*Funding sources: Supported by The Ranjini and Ajay Poddar Resource Fund for dermatologic disease research (to Dr King).*

*Conflicts of interest: Dr Wambier is an investigator in alopecia areata clinical trials for Concert Pharmaceuticals Inc, Eli Lilly and Company, and Pfizer Inc. Dr King is a consultant for Aclaris Therapeutics Inc, Eli Lilly and Company, Concert Pharmaceuticals Inc, Pfizer Inc, and Dermavant Sciences Inc; has served on advisory boards for Eli Lilly and Company, Dermavant Sciences Inc, and Pfizer Inc; and is a clinical trial investigator in alopecia areata clinical trials for Concert Pharmaceuticals Inc, Eli Lilly and Company, and Pfizer Inc.*

*Reprint requests: Carlos Gustavo Wambier, MD, PhD, Yale Center for Clinical Investigation, 2 Church St South, Ste 401, New Haven, CT, 06519*

*E-mail: [carlos.wambier@yale.edu](mailto:carlos.wambier@yale.edu)*

#### REFERENCES

1. Olsen EA, Hordinsky MK, Price VH, et al. Alopecia areata investigational assessment guidelines—part II. *J Am Acad Dermatol.* 2004;51(3):440-447.
2. Olsen EA, Canfield D. SALT II: a new take on the Severity of Alopecia Tool (SALT) for determining percentage scalp hair loss. *J Am Acad Dermatol.* 2016; 75(6):1268-1270.
3. Donor area harvesting. In: Unger W, Shapiro R, Unger R, Unger M, eds. *Hair transplantation.* 5th ed. New York, NY: Informa Healthcare; 2011:247-290.
4. Dargan D, Mandal A, Shokrollahi K. Hand burns surface area: a rule of thumb. *Burns.* 2018;44(5):1346-1351.

<https://doi.org/10.1016/j.jaad.2019.01.022>

#### Impact of the Patient Protection and Affordable Care Act on dermatologic health care utilization



*To the Editor:* The Patient Protection and Affordable Care Act (PPACA) was signed into law in March 2010 and is one of the most significant undertakings to date aimed at increasing equity in access to health care in the United States. Although the PPACA increased access to health care significantly among individuals with low incomes who have completed low levels of education, disparities remain in access to care between non-Hispanic whites and both blacks or Hispanics.<sup>1</sup>

There is little information regarding the effect of PPACA passage on utilization of dermatologic care.<sup>2</sup>