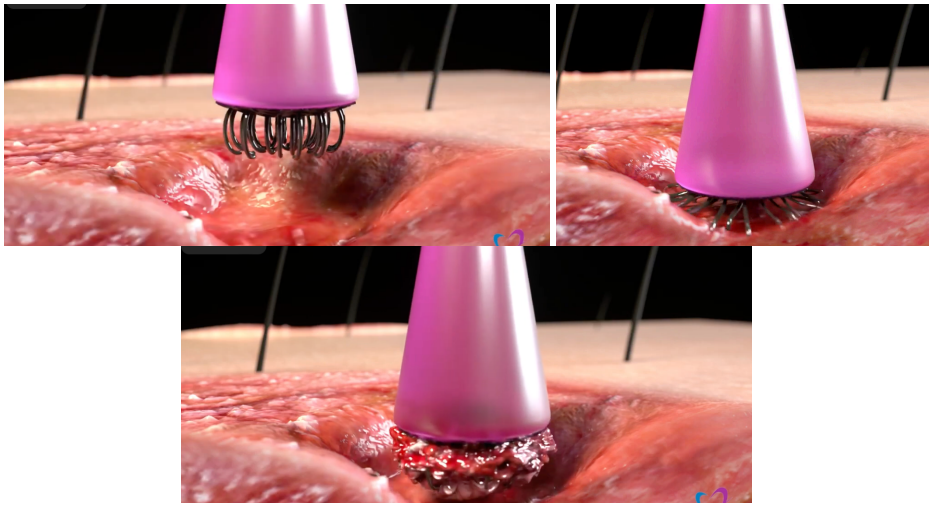
Biopsy Practice Utilizing Wound Tangential Biopsy Versus Intact Skin Tangential Biopsy
Guidance on Best Practice Using Kylon® Brush-Curettes and Conventional Biopsy Means

Tangential Biopsies for Disrupted Epithelium Skin Wounds: General Principles of Practice
Targeting Viable Pathological Target(s) in the Cleaned Wound Base:
Kylon® Fabric Tangential Biopsy of Disrupted Epidermis, Dermis, or Subcutaneous Tissue:

Ulcerated or necrosis-laden wounds should be cleared of debris and slough if the brush micro-curettes are used to shave and entrap tangential biopsies from the surface. ***Once the target areas of the wound are cleared of the debris, the soft viable tissue is exposed and a potentially pathologic target area(s) can be more easily identified***. Although some ulcerated and necrotic tissue will be obtained during biopsy in some cases, viable tissue with possible pathologic changes (if accurately targeted) will be excavated and entrapped as tangential "shavings", not cylindrical punch biopsy specimens customary with a Keyes punch.

For disrupted skin with exposed soft tissue, the excavation and trapping for subcutaneous pathology with dermal and/or epithelial elements, or biofilm entrapped organisms is possible. Applying the brush head to the "lesion" in the wound, accompanied by pressurized rotation akin to clockwise/counterclockwise key-turning, the hooked-brush expose shallow curette tips that penetrate, excavate, and permit for specimen- trapping within the Kylon® bristles. The moist non-keratinized areas detach easily and are trapped into the hook array in a rapid, efficient manner. The device tip is snapped free from the handle and sent to the laboratory.



****At this time, use of Kylon® micro-curettes for intraepithelial or trans-epithelial biopsy, due to the keratin protective layer, will require and accessory to stiffen skin. Intact skin or peri-wound skin biopsy with Kylon® is not currently available on the market.***

Tangential Biopsies for Keratinized, Intact Skin: General Principles of Practice:

Guidance away from using Kylon® on intact skin biopsy targets:

> ***Can the use of Kylon® devices be relied on to biopsy lesions on intact keratinized skin?***
>
> **Kylon® micro-brush-curettes are not proven to remove biopsy tissue from intact skin (lesions).* In the case of the use of Kylon®, these are dozens of micro-curette hooks with semi-sharp and frictional micro-curettes simultaneously shaving a broader area of soft tissue with pressurized rotation, detaching strips and simultaneously trapping them in the hook-array. ***We guide this method be used in non-keratinized disrupted skin where we can detect both the loosened epithelium and the sub-epithelial tissues such as dermis or subcutaneous tissue.*** The tissue filled hook-array with trapped tissue can be separated from the devices and transported to the laboratory for analysis. ***Tangential biopsies (by any means that cause shaving) are not the preferred method for pigmented lesions as noted below.*** **Shave Biopsy:** Tangential biopsy is also referred to as a shave biopsy, where a thin slice of skin is traditionally taken using a blade. [1, 1, 2, 2, 3, 3].

Biopsies not using the cylindrical "cutting" punch biopsy method:

Tangential biopsies taken with conventional (sharp) means commonly a scalpel, often used for superficial skin lesions, are suitable for lesions like **small, raised benign growths, Seborrheic keratoses, skin tags, and actinic keratosis**. They involve shaving off the top layer of the lesion, making them best suited for superficial conditions and those that are entirely above the skin surface. [1, 2, 3]

Elaboration on Suitable Clinical Scenarios: [1, 1, 4, 4]

- **Superficial Lesions:** Tangential biopsies are primarily used for lesions that are located near the skin's surface. [1, 1, 4, 4]
- **Small, Raised Benign Growths:** These biopsies are often employed for small, raised skin growths, such as skin tags, which are typically benign. [1, 2, 5, 6, 7]
- **Seborrheic Keratoses:** These are common, benign skin growths that can be removed using tangential biopsy. [1, 1, 2, 2]
- **Actinic Keratosis:** These are precancerous lesions often removed with shave biopsy. [1, 1, 2, 2, 3, 8]
- **Skin Tags:** These are also benign growths that can be easily shaved off. [2, 2, 9, 10]
- **No Stitches Needed:** Unlike deeper biopsies like punch biopsies, tangential biopsies often do not require stitches, as the wound typically heals by itself. [3, 3, 11, 11]

[1] https://www.sciencedirect.com/science/article/pii/S157821901200056X
[2] https://dermnetnz.org/cme/lesions/surgical-procedures
[3] https://dermnetnz.org/topics/skin-biopsy
[4] https://southernskiesdermatology.com/skin-biopsies/
[5] https://pubmed.ncbi.nlm.nih.gov/25373033/
[6] https://www.revitaliseskincareclinic.co.uk/lesion-removal/
[7] https://www.laserskinclinics.co.uk/products/blemish-removal-spider-veins-skin-tags-skin-blemishes
[8] https://medlineplus.gov/lab-tests/skin-biopsy/
[9] https://www.ncbi.nlm.nih.gov/books/NBK557401/
[10] https://www.scarsurgeon.com/skin.html
[11] https://my.clevelandclinic.org/health/diagnostics/21857-skin-biopsy

***More information on Tangential/Shave Biopsy if intact skin with conventional instruments*:**

Shave biopsies are generally used for superficial skin lesions that are predominantly epidermal, such as **warts, skin tags, papillomas, and seborrheic keratoses**. They are also used for diagnosing **superficial basal cell carcinomas and squamous cell carcinomas**. Targeting of the correct area of the wound takes expertise and if the most neoplastic area is not removed, the tangential biopsy sample will not accurately grade the lesion. **Shave biopsies are not suitable for melanoma or other suspicious pigmented lesions.** [1, 2, 3, 4, 5]

Here's a more detailed breakdown:

Tangential Biopsies of intact skin are not suitable for: [5, 5]

- **Suspicious pigmented lesions:** Shave biopsies can yield inadequate specimens for evaluating melanomas and may preclude proper microstaging.
- **Inflammatory skin diseases:** Shave biopsies may not be adequate for obtaining representative samples of inflammatory conditions. [2, 5, 5]

In summary, shave biopsies are a relatively quick and easy way to diagnose and remove superficial, non-pigmented skin lesions, particularly those that are primarily epidermal or involve early non-melanoma skin cancers. [1, 2, 3, 4,]

[1] https://5minuteconsult.com/collectioncontent/30-156321/procedures/shave-biopsy
[2] https://www.aafp.org/pubs/afp/issues/2011/1101/p995.html
[3] https://www.hmpgloballearningnetwork.com/site/podiatry/guide-biopsy-techniques
[4] https://cancer.ca/en/treatments/tests-and-procedures/shave-biopsy
[5] https://www.sciencedirect.com/topics/medicine-and-dentistry/shave-biopsy