American College of Physicians - Internal Medicine Meeting 2025
New Orleans, LA

Skin Biopsy and Cryosurgery

Faculty Information

Director:

Richard Shellenberger, DO, MACP

Irina Burman, MD, FACP

Roger W. Bush, MD, MACP

Auguste H. Fortin, VI, MD, MPH, MACP

Thomas C. Gunby, MD, FACP

Carrie A. Horwitch, MD, MPH, MACP

Paul A. Smith, MD, MACP

Posted Date: February 24, 2025

Table of Contents

How to Do a Biopsy

Shave Biopsy

1. Anesthetize the Skin
   Position needle perpendicular to skin Inject intradermally
   Raise wheal under lesion

2. Stabilize Skin
   Stretch skin with finger and thumb

3. Select Cutting Instrument
   Select razor or # 15 scalpel

4. Make Incision
   i. Angle scalpel blade or curve razor between thumb and forefinger for proper depth.
   ii. Use smooth, even cutting motion

Excisional Biopsy

1. Plan Excision
   Outline excision with surgical pen (elliptical, diamond, hexagon)
   Make elliptical excision with length 3x width

2. Make Initial Excision
   Begin with point of scalpel blade
   Use middle of scalpel blade for middle of incision
   End with point of scalpel blade at end of incision
   Angle blade edge slightly away from lesion

3. Excise Incision
   Lift corner of excision with tissue forceps
   Evenly undermine the skin with scalpel or scissors at level of subcutaneous fat

4. Close Wound
   Select suture placement sites by using "rule of halves"
   Grasp needle 1/3 distance from eye with needle holder
   Place needle point perpendicular to skin, 1-2 mm from wound edge
   Drive needle point down, then up into center of wound
   Pull needle through with holder
   Repeat process from center of wound to point 1-2mm from opposite wound edge
   Approximate wound edges by tying two or more surgical knots

Punch Biopsy

1. Anesthetize the Skin
   Position needle perpendicular to the skin
   Inject intradermally
   Raise wheal under lesion

2. Stabilize the Skin
   Stretch the skin with thumb and forefinger

3. Cut Core Biopsy
   Place punch perpendicular to skin surface
   Apply steady downward pressure
   Turn punch smoothly in clockwise direction
   Stop when punch reaches subcutaneous fat ("gives way")

4. Remove Biopsy Core
   Press fingers downward on adjacent skin to pop up core
   Lift core with needle or forceps
   Cut base of core with tissue scissors

5. Close Wound
   Select suture placement sites by using “rule of halves"
   Grasp needle 1/3 distance from eye with needle holder
   Place needle point perpendicular to skin, ~ 2 mm from wound edge
   Drive needle point down, then up into center of wound
   Pull needle through with holder
   Repeat process from center of wound to point l-2mm from opposite wound edge
   Approximate wound edges by tying two or more surgical knots

Common Skin Biopsy Techniques- Procedural Information

What doctors need to know about skin biopsy

- Biopsies have limitations, may exclude disease but establish a specific clinical diagnosis
- Type of specimen, area of lesion biopsied, depth of biopsy is crucial to diagnosis, so some understanding of the histology of the disease is important
- Clinical and historical data improves histologic interpretation by pathologist
- Histologic description/diagnosis does not equal a clinical diagnosis, e.g. there is no clinical disease "subacute dermatitis" or "spongiotic dermatitis"
- Dermatopathologists are better trained than general pathologists in reading skin
- "Margins clear" does not equate with surgical margins for malignancies. Know your limitations: in biopsies, in interpretation, in treatment

What patients need to know about biopsies

- All biopsies leave scars
- Reasons for biopsy
- Alternatives, if available
- How and when results of biopsy will be reported
- Wound care instructions
- Follow-up

Indications

- To make or confirm histopathologic diagnoses
- To accomplish definitive treatment of abnormal, malignant, atypical lesions
- To perform elective removal for cosmetic reasons

Contraindications

- Infection at the biopsy site
- Bleeding disorder
- Allergy to local anesthetics

Surgical Safety

- Hepatitis B vaccines are recommended for all medical professionals whose work puts them at potential risk for exposure to Hepatitis B
- Double glove when there is greater potential for needle sticks, cuts (extended procedures)
- Wear eye guards when there is potential for splashing, squirting, spraying
- Masks are worn for elliptical excisions, larger surgeries and if you have a respiratory infection or are a Staph or Strep carrier
- Contaminated material disposal:
    - Sharps go in OSHA and State OSHA approved containers which can be provided by your local lab or medical waste provider
    - Blood or other body fluid drainage “soaked" material disposed in red biohazard plastic bags, but blood-stained gauze can go in routine trash. Check into state OSHA rules.

Post-procedure Care

Open Wounds

- Covered wounds heal more quickly and avoid scab formation
- Remove dressing in 12-24 hours, gently wash BID with soap and water Cover wound with thin film of petrolatum or antibiotic ointment
- Cover with Band-Aid or nonadherent dressing for at least 5 days or until re-epithelialized;

Sutured Wounds

- Remove dressing in 12-24 hours, gently wash with soap and water; remove crusts
- Cover with thin film petrolatum or antibiotic ointment; Band-Aid optional
  Showers and baths safe; avoid prolonged soaking, hot tubs, swimming
- Avoid activities, movements which stress, stretch, pull wound

Suture Removal

- Face: 4-6 days; apply Steri-Strips
- Chest, abdomen, upper extremities, scalp: 7-10 days
- Back, lower extremities: 12-20 days
- Removing sutures early reduces railroad tracking on skin

Possible Complications

Bleeding

- Rarely a problem in small biopsies
- Avoid ASA and NSAIDS for 10 days before excisions
- Don't stop Coumadin; use caution; for large excisions may need to switch patients from Coumadin to heparin
- Use pressure dressings (gauze over site then wrap tightly with Kling, Coban or Ace) when patients on NSAIDS, Coumadin, and with wounds and sites prone to bleeding
- Apply cold packs (chopped ice, gel packs, frozen vegetables) frequently in 3-5 minute applications over first 24 hours (usually not necessary for small biopsies)

Scarring

- All surgery leaves scars; goal is to minimize their appearance
- Biopsy/excise tissue only when necessary
- Recognize your skills; when necessary, refer biopsies in cosmetically important areas.
- Younger people (children and young adults) have less forgiving skin than older folks
- Certain body areas prone to scarring badly include: mandible, chest, neck, shoulders, hands, feet
- Always advise patients there will be a resultant scar; don't minimize

Infections

- Uncommon with skin biopsies; usually Staph aureus, less commonly Strep
- Candida can cause infections in intertriginous areas and toes especially if antibiotics used
- When frankly infected, cellulitic, purulent, and in patients with prosthetic devices use oral antibiotics; for local infections mupirocin (Bactroban) ointment adequate
- Candida infections in intertriginous areas and feet: topical antifungal
- Antibiotic prophylaxis only for mucosal biopsies and large excisions

Adverse Reactions

- Most common: allergic contact dermatitis to neomycin (in triple antibiotics, Neosporin), occasionally due to bacitracin, polymixin B
    - Red bumpy or vesicular rash, pruritic
    - Stop neomycin, may use topical corticosteroid
- Irritant dermatitis
    - Polymyxin: red, inflamed, may be itchy or sore; treat by discontinuing drug
    - Tape: red, inflamed, itches or sore; stop tape, change type of tape, change direction
- Reaction to Suture: remove suture as soon as is safe Reactions to anesthesia
- Rare allergies to lidocaine, but can occur, often begin as local urticarial
    - Epinephrine sensitivity: syncopal episode, palpitations; avoid using epinephrine if known
    - Preservatives can cause generalized reactions (very rare)
    - No cross reactivity between novocaine and lidocaine

Documentation

Document all procedures in medical record

What was done
How
Why
Complications
Specimen disposition (submission to path lab, discard)
Patient instructions

Samples of proper documentation

Shave/saucerization biopsies

Dx: Diagnosis of possible BCC and need for path diagnosis discussed. Complications including scar discussed. Consents to shave biopsy left ear.
Prep: Alcohol
Anesthesia: 1% lidocaine/ epi/ NaHC03
Procedure: Shave biopsy. Aluminum Chloride for hemostasis. Band-Aid dressing.
Specimen disposition: Specimen to pathology.
Patient Education: Wound care instructions. Return visit in 2 weeks for wound check and pathology results.

Punch biopsy
Dx: Possible diagnoses and need to confirm lupus discussed. Complications including scar reviewed. Consents to two biopsies left arm.
Prep: Alcohol prep
Anesthesia: I% lido/ epi/ NaHC03
Procedure: Two 3.5mm punch biopsies to depth of sub cutis obtained from the left upper outer arm and left upper inner arm. Each closed with one 4-0 nylon suture. Band-Aid dressings.
Specimen disposition: One specimen for routine pathological analysis, one in Michel's for DIF.
Patient Education: Wound care instructions. Return in 10 days for suture removal and to discuss results

Elliptical excision biopsy
Dx: Atypical nevus 1.0 x 0.5cm right upper back
Prep: Betadine and alcohol
Anesthesia: 2% lido/epi/ NaHC03
Procedure: The possible diagnoses, procedure, need for biopsy, potential complications including scarring were discussed and she consents to procedure. Patient was placed prone on the operating table, local anesthesia achieved, skin prepped and draped in usual sterile fashion. The lesion and a 1 mm clear-appearing margin excised in elliptical fashion to depth of sub cutis. Bleeding points electrodessicated. Closed with seven 4-0 nylon sutures. Final length 3.0cm. Tolerated procedure well. Polysporin and pressure dressing.
Specimen disposition: Specimen to path
Patient Education and Aftercare: Wound care instructions given. Return visit for suture removal and results in 2-3 weeks.

Supplies and Instruments

1. Prep solutions:
   - isopropyl alcohol
   - povidone-iodine,
   - chlorhexidine
2. Gauze, 3x3 or 4x4, cotton-tipped applicators; sterile for excisions
3. Drapes, plastic, cloth or paper (fenestrated) for elliptical excisions
4. Syringes, 1 and 3 cc
5. Needles, 22 gauge to draw up solutions, 30 gauge for injections
6. Lidocaine (0.5, 1, or 2%) with or without epinephrine 1: 100,000 buffered with sodium bicarbonate (1 part NaHC03 : 9 parts lidocaine) -premix in bottle, can be kept 30 days
7. 15 or 15C sterile surgical blades on handles or placed on #3 knife handle
8. Scalpel blade remover
9. Double edged straight razor cut in half
10. Small tissue forceps (e.g. Adson 4 3/4in, lx2 teeth, 1 mm tip)
11. Small tissue scissors, straight or curved 3 1/2-4in (e.g. Gradle or tenotomy 3 3/4in)
12. Needle holders 4 1/2 - 5 in., smooth jawed, small tip (e.g. Webster 5 ¼")
13. Punches, disposable, 2-8mm (3, 3.5, and 4 mm punches are used most commonly)
14. Hemostatic agents:
    - aluminum chloride (A1Cl3)
    - silver nitrate (stains brown)
    - electrocautery device or battery-operated cautery
10. Suture and Needles:
    - nylon most useful
    - use 4-0 or 5-0 on C-17
    - P-3 or FS-3 needle
    - on face use 6-0 on C-17 or P-3 needle only
    - proline is used on scalp; it is blue and easily distinguished from hair
11. Alcohol swab or gauze for cleaning surgical site at biopsy completion
12. Petrolatum or antibiotic ointment (polymixin/bacitracin, mupirocin)
13. Band-Aids or telfa or gauze wrap

Frequently Asked Questions

1. How do l match the biopsy technique to the lesion?
   Lesions that are most suitable for shave biopsies are either elevated above the skin, or pathology is confined to the epidermis and uppermost (papillary) dermis. Examples include seborrheic or actinic keratoses, skin tags, warts, and superficial basal or squamous carcinomas. Shave biopsies should not be used for pigmented lesions; if an unsuspected melanoma is partially removed, it cannot be properly staged. The punch is an ideal procedure for diagnostic skin biopsy or removing small lesions, and often a better cosmetic result when sutured closed than a shave biopsy. Excisions are reserved for lesions that cannot be removed with a punch due to size, depth or location. Its main advantage is the amount of tissue that can be excised, allowing for multiple studies (culture, histopathology, immunofluorescence, electron microscopy) from one biopsy site. Excisions are especially well suited for removal of large skin tumors or inflammatory disorders deep in the skin, involving the panniculus.

2. What part of the lesion should be biopsied?
   Generally, lesions with the most advanced inflammatory changes should be chosen; evolutionary changes may take several days and a too early biopsy may reveal only nonspecific features. When in doubt, biopsies of two or three clinically different appearing lesions may be helpful. For blistering diseases, the reverse is true; the earlier the lesion, the more specific the histopathology. Consequently, only the newest vesicles and blisters should be biopsied, usually within 48 hours of their appearance. Older lesions with secondary changes such as crusts, fissures, erosions, excoriations, and ulcerations should be avoided since the primary pathological process may be obscured. For nonbullous lesions, the biopsy should include maximal lesional skin and minimal normal skin. For lesions between 1-4mm in diameter, biopsy the center or excise the entire lesion. For large lesions, biopsy either the edge, the thickest portion, or area that is most abnormal in color because these sites will most likely contain the distinctive pathology. Whenever possible, remove vesicles intact, making sure to include adjacent normal appearing skin, since disruption makes histological interpretation more difficult. Similarly, bullae should be biopsied at their edge, and include several millimeters of adjacent non-bullous skin. This is critical for determining the "split" or blister level of the skin, which is essential for accurate diagnosis.

3. Should sterile gloves, mask and gown be used during a skin biopsy?
   Shave and punch biopsies are clean, not sterile procedures; mask, gown and sterile gloves are not necessary. A mask is recommended for operators or assistants known to be respiratory carriers of *Staphylococcal* or *Streptococcal* organisms. Mask, gown and sterile gloves are indicated for excisions, and are reasonable for any patient at increased risk for infection.

4. How are wrinkle lines used to orient a biopsy?
   Round wounds tend to be pulled open in the direction of skin tension lines known as Langer's lines, generally parallel the direction of collagen in the dermis. Tension lines can be demonstrated by gently compressing relaxed skin with the thumb and index finger, and wrinkle lines on the face are another good indicator. Surgical excisions placed parallel to tension lines close more easily and cosmetically those placed at right angles. For a punch biopsy, stabilize the skin with the thumb and forefinger, stretching it slightly perpendicular to the normal skin tension lines. This will produce an oval rather than a round wound, facilitating closure.

5. When and where should epinephrine be avoided in performing local anesthesia?
   Avoid the use of epinephrine for acral lesions, or when large quantities are needed, especially in patients with cardiovascular or peripheral vascular disease, and in patients with severe hypertension.

6. How wide should the margins be around a suspected melanoma?
   The biopsy of suspected melanoma, even when done by excisional technique, is always a biopsy only and not definitive treatment. The depth of tumor invasion determines the amount of tumor free margin. In practical terms, this means that the original excision must be revised after the pathology report has been reviewed, usually creating wider tumor margins and extending the level of excision down to the deep muscle fascia. This is required even if the margins of the original biopsy are reported to be "free of tumor." Practitioners who have no clinical training in excisions, or have limited expertise in diagnosis and treatment of melanoma, should refer these patients to a qualified dermatologist or surgeon. Additionally, short and long-term follow-up is mandatory for all patients diagnosed with melanoma, making referral to a dermatologist with expertise in melanoma most appropriate.

7. What follow-up is necessary for a basal cell or squamous cell carcinoma if the biopsy margins are read as "clear" by the pathologist?
   Pathologist cannot determine tumor-free margins on shave biopsies. Both basal cell and squamous cell carcinoma require definitive treatment beyond punch or excisional biopsy. The most appropriate treatment is determined by several criteria, including lesion size, depth, location, clinical history, previous treatment, patient age, health status, and histological features of the cancer. In the absence of special training, these patients should be referred to a dermatologist or surgeon trained in managing skin cancers. Patients with no melanoma skin cancer should be evaluated 3 and 6 months post-treatment, and at least annually thereafter. The follow-up examination should include inspection and palpation of the excisional scar, and palpation of regional lymph nodes. Other potential cancer sites should be examined, with particular attention to sun-exposed areas of the body, including the head, neck, forearms, and hands. Rough areas, scaling, and lumps may indicate tumor recurrence or extension, or a new cancer. Total body skin exams should be done at least annually in all patients with a history of skin cancer, and patients should be taught skin self-examination techniques. Patients who have more than three skin cancers or who have undergone organ transplantation are at higher risk for additional tumors, and may require more frequent examinations.

8. How should the biopsy specimen be submitted to pathology?
   For light microscopy, the specimen should be placed in a 10% buffered formalin solution provided by pathology; each specimen should be placed into a separate bottle and identified. Specimens less than 1 cm in greatest dimension can be adequately fixed in 30 ml of formalin, but larger specimens will need more formalin and should be sectioned in order to ensure adequate fixation. Definitive excision of tumors should have margins (superior, inferior, lateral, medical) identified by suture needle placement or tissue dye. Identify the site of the needle or dye with a drawing on the pathology request form. Special studies require special handling. Specimens to be submitted for direct immunofluorescence (blistering diseases and lupus erythematosus) should be fixed in Michel's solution, whereas specimens submitted for electron microscopy should be fixed in glutaraldehyde. Specimens requiring bacterial or fungal cultures can be submitted in a sterile container with non-bacteriostatic saline, and viral studies require viral transport media. The pathology laboratory can supply all fixatives and transport media.

9. What size needle and suture are best for closing a punch biopsy?
   Suture size is indicated by the code 0; the more 0's, the smaller the suture diameter. Generally, 4-0 or 5-0 monofilament nylon can be used on the body and scalp, and 6-0 nylon on the face. For skin, reverse cutting (FS) and cutting needles (CE) are used on thick skin, whereas plastic (P), plastic skin (PS), and premium (PRE) are used for cosmetic closures. The size of the needle is ranked by a number, with higher numbers identifying larger needles. Needle curvature is measured in terms of proportion of a circle, with 1/4, 3/8, and 1/2 curves available. Most biopsy wounds in thick skin can be closed using a FS-3 or CE-3 needle, and P-3 can be used for the face, all with a 3/8 curvature. C-17 needles were specifically developed to close punch biopsies, and are less expensive than FS, CE, P or PRE-needles.

10. How long should sutures be left in place after closing a biopsy site?
    Generally, sutures on the face can be removed in 3-5 days, followed by the application of semi-permeable adhesive strips to reduce wound tension. Sutures on the chest, abdomen, arms and scalp can be removed in 7-10 days and those on the back and legs in 12-20 days.

11. How should the wound be dressed following a biopsy?
    Wounds heal faster when moist and under an occlusive or semi-occlusive dressing. All biopsy wounds can be dressed with a thin film of an antibiotic ointment (Bacitracin, Polysporin, mupirocin) or petrolatum to prevent crust formation, then covered with a Band-Aid or other non-adherent covering, and topped with a gauze dressing and tape.

12. What should the patient be told about wound care following a biopsy?
    The dressing should be removed in 12-24 hours and thereafter cleaned with soap and water twice daily. After cleaning, the wound should be covered with an antibiotic ointment or petrolatum. Wounds healing by secondary intention (shave biopsies) need to be redressed after each cleaning until healed over, or for at least five days, whereas this is optional for sutured wounds. For sutured wounds, showering is permitted after 24 hours, but use of hot tubs is prohibited until the sutures are removed.

Cryosurgery

A. General principles

- Application of liquid nitrogen (-170 degrees C) to lesion destroys tissue
- Outcome is affected by: (l) the length of time of application, (2) the method of application, (3) the type and thickness of the lesion treated and (4) the location (body area)
- Some type of scarring is expected but is usually minimal; the melanocyte is most sensitive cell to cold, so hypo and depigmentation should be expected
- Thick lesions in cosmetically important areas of the body (face) may not be the best choice for cryosurgery
- Freezing is inherently painful
- When treating the face, especially the temples and forehead, use caution in patients with cold induced migraines
- Nerve damage can result, especially when treating distal digits.
- Pigmented lesions such as lentigines and seborrheic keratoses are effectively treated with freezing

B. Application Techniques

Cryospray: spray from thermos with specially designed tips and probes Spray centrifugally or transversely in paint brushing fashion

- Can be poured from large vacuum bottle containers into small hand-held units Readily available from gas companies

Tips: four apertures A through D

A is the largest, reserved for extensive or deep lesions
B aperture is the most commonly used; useful for treating lesions 0.5 to 1 cm in size
C aperture is used for treating smaller lesions such as warts and keratoses
D aperture is used for extremely small lesions

A wide aperture ("acne spray tip") can be used to paint large surface areas for conditions like acne or psoriasis

Cones: plastic disk with four cone-shaped openings

0.3, 0.5, 0.8 and 1 cm in diameter
Appropriate size is placed around lesions to confine the spray
Allows lateral spread of freeze to develop more quickly, reducing spraying time
Contaminated cones must be sterilized (autoclaved).

Probes

- Solid brass tips connected to the hand-held liquid nitrogen unit
- Cold is transferred along the length of the probe by conduction
- Distal end of probe is placed on lesion to freeze by contact
- Contaminated probes must be sterilized
    - microorganisms can be transferred to other patients).

Cotton-tipped applicators

- Standard and gynecologic or proctology sizes are ideal for direct lesion application.
- Cotton tips can be twisted or "wisped" for even freezing
- Liquid nitrogen (LN2) is poured from thermos into Styrofoam cups, cotton- tipped applicators are placed in cups for several seconds. Apply tip of applicator to lesion. Dispose of LN2, applicators and cup after treatment is complete; do not reuse applicator, cup or previously used LN2 to avoid transmission of organisms. Two cups keep LN2 liquid longer; bottom cup can be reused)
- Pressure of application effects freeze: Use light application for skin tags, flat warts, molluscum and firm pressure for actinic keratoses, seborrheic keratoses and warts.

Verruca Freeze

- Convenient for nursing home and office use only for benign lesions
- It cannot achieve temperatures cold enough for complete destruction of premalignant and malignant lesions

C. Lesion Specific Procedures

Warts

1. Soften wart by soaking a few minutes in water, then paring the thickened callous and wart with a# 15 blade until callous is removed or until site is too painful to further pare.
2. Apply LN2 with cotton-tipped applicator firmly on the wart long enough to whiten the wart and a 2-mm. ring of tissue around wart; use fresh applicators every 5-10 sec,
3. Or, spray wart with LN2 until wart and 2mm ring around wart whitens. Cone helps confine spray to lesion. Cryoprobe may be best to minimize damage to surrounding tissue. Use probe for small or vascular lesions.
4. Freezing should continue for 30 seconds for periungual, plantar, thick and recurrent warts, and for 15-20 seconds for thinner warts; 5-10 seconds is adequate for flat warts, molluscum contagiosum and small skin tags. Target freezing depth is 2-4 mm.

5. Protect underlying tissue by:
    - Elevating lesion with a wheal
    - Elevating the skin by pinching
    - Extending or pulling the skin away from underlying nerves
6. To prevent damage to normal tissue, the best strategy is to under-treat and re-treat until a higher level of proficiency is attained.
7. Local anesthesia is optional but recommended for periungual warts and deep tissue freezes when treating skin cancer.

Seborrheic keratoses

1. Apply LN2 with cotton-tipped applicator or spray lesion for 3-8 seconds
2. Shorter freeze time for thin lesions, longer freeze time for thicker lesions
3. No surrounding tissue need be frozen

Actinic keratoses

1. Spray lesion and 1-2 mm. border until lesion is white, continue for 15 seconds
2. Direct spray centrifugally or transversely in paintbrush pattern covering entire area
3. Or apply cotton-tipped applicator firmly to entire lesion and 1-2 mm border, whiten for 15 seconds

D. Post Treatment with Cryotherapy

1. Highly dependent on depth of freeze and associated tissue destruction

    Deep freezes:
    - Edema within hours
    - Bullae formation in 12-24hours
    - Weeping of wound for 2-3 days
    - Eschar formation in 1 week, remaining for up to 1 month
    - Scar and hypopigmentation may be permanent sequelae

    Superficial freezes:
    - Redness
    - Crusting, falling off in 5-7 days
    - Erythema at treatment site after crust is gone which gradually fades

2. Wound Care: Daily cleaning with soap and water

Bibliography

1. Alguire PC, Mathes BM. Skin biopsy techniques for the internist. JGIM 1998; 13:46-54.

2. Graham GF. Cryosurgery. In: The Atlas of Office Procedures; Dermatologic Procedures. Alguire PC, Mathes BM eds. Philadelphia: W.B. Saunders; 1999: 109- 129.

3. Grekin RC. Simple dermatological procedures. Res Staff Phys 1989; 35:61-7.

4. Moy RL, Waldman B, Hein DW. A review of sutures and suturing technique. J Dermatol Surg Oncol 1992; 18:785-95.

5. **Weinstock MA, Goldstein MG., Dube CE, Rhodes AR, Sober AJ. Basic skin cancer triage for teaching melanoma detection. J Am Acad Dermatol 1996; 34: 1063-1066.**

6. Wark KJ, Smith SD, Sebaratnam DF. How to perform a skin biopsy. *Med J Aust*. 2020;212(4):156-158.e1. doi:10.5694/mja2.50473

7. Swetter SM, Tsao H, Bichakjian CK, et al. Guidelines of care for the management of primary cutaneous melanoma. *J Am Acad Dermatol*. 2019;80(1):208-250. doi:10.1016/j.jaad.2018.08.055

8. Shellenberger RA, Kakaraparthi S, Tawagi K. Melanoma Screening: Thinking Beyond the Guidelines. *Mayo Clin Proc*. 2017;92(5):693-698. doi:10.1016/j.mayocp.2017.01.017

9. Shellenberger RA, Fayyaz F, Sako Z, et al. Impact of Biopsy Technique on Clinically Important Outcomes for Cutaneous Melanoma: A Systematic Review and Meta-analysis. *Mayo Clin Proc Innov Qual Outcomes*. 2020;4(4):373-383. Published 2020 Jul 15. doi:10.1016/j.mayocpiqo.2020.04.005

Appendix 1: Common lesions that can be appropriately treated with cryosurgery

Benign Lesions	Premalignant	Malignant
Acne Vulgaris Angioma, cherry or spider Dermatofibroma Lentigines Nevi Seborrheic keratosis Verrucae	Actinic Keratosis	Squamous cell carcinoma Basal cell carcinoma Bowen's Disease

---

Removal of Skin Tags

Removal by scissoring or any sharp method, ligature strangulation, electrosurgical destruction or combination of treatment modalities including chemical or electrocauterization of wound, with at without local anesthesia.

11200* - Removal of skin tags, multiple fibrocutaneous tags, any area; up to and including 15 lesions

+11201 -each additional ten lesions (List separately in addition to code for primary procedure) (Use 11201 in conjunction with code 11200)

Shaving of Epidermal or Dermal lesions

Shaving is the sharp removal by transverse incision or horizontal slicing to remove epidermal and dermal lesions without a full-thickness. dermal excision. This includes local anesthesia, chemical or electrocauterization of the wound. The wound does not require suture closure.

11300*- Shaving of epidermal or dermal lesion, single lesion, trunk, arms or legs; lesion diameter 0.5 cm. or less

11301 lesion diameter 0.6 to 1.0 cm.

11302 lesion diameter 1.1 to 2.0 cm.

11303 lesion diameters over 2.0 cm

11305*- Shaving of epidermal or dermal lesion, single lesion, scalp, neck, hands, feet, genitalia; lesion diameter 0.5 cm or less

11306 lesion diameter 0.6 to 1.0 cm

11307 lesion diameter 1.1 to 2.0 cm

11308 lesion diameters over 2.0 cm

11310*- Shaving of epidermal or dermal lesion, single lesion, face, ears, eyelids, nose, lips, mucous membrane: lesion diameter 0.5 cm or less

11311 lesion diameter 0.6 to 10 cm

11312 lesion diameter 1.1 to 2 0 cm

11313 lesion diameters over 2.0 cm

Excision -Benign Lesions

Excision (including simple closure) of benign lesions of skin or subcutaneous tissues (i.e., cicatricial, fibrous, inflammatory, congenital, cystic lesions), including local anesthesia. See appropriate size and area below.

Excision is defined as full-thickness (through the dermis) removal of the following lesions and includes simple (non-layered) closure. The closure of defects created by incision, excision, or trauma may require intermediate (layered) closure, Layered closure involves dermal closure with separate suture closure of at least one of the deeper layers *of* subcutaneous and non-muscle fascial tissues. See page 57 and following for repair codes.

(For excision of lesions requiring more than, simple closure, i.e., requiring intermediate, complex, or reconstructive closure, see 12031-12057 ,13100-13160, 14000-14300,15000-15261,15570-15770)

(For electrosurgical and other methods, see 17000 et seq)

11400- Excision, benign lesion, except skin tag (unless listed elsewhere), trunk, arms or legs; lesion diameter 0.5 cm or less

11401 lesion diameter 0.6 to 1.0 cm

11402 lesion/diameter 1.1to 2.0 cm

11403 lesion//diameter 2.1 to 3.0 cm

11404 lesion diameter 3.1 to 4.0 cm

11406 lesion diameter over 4.0 cm

(For unusual or complicated excision, add modifier '-22')

11420- Excision, benign lesion, except skin tag (unless listed elsewhere), scalp; neck, hands, feet, genitalia; lesion diameter 0.5 cm or less

11421 lesion diameter 0.6 to 1.0 cm

11422 lesion diameter 1.1 to 2 .0 cm

11423 lesion diameter 2.1 to 3.0 cm

11424 lesion diameter 3.1 to 4.0 cm

11426 lesion diameter over 4.0 cm

(For unusual or complicated excision, add modifier '-22')

11440- Excision, other benign lesion (unless listed elsewhere), face, ears, eyelids, nose, lips, mucous membrane; lesion diameter 0.5 cm or less

11441 lesion diameter 0.13 to 1.0 cm

11442 lesion diameter 1.1 to 2.0 cm

11443 lesion diameter 2.1 to 3.0 cm

11444 lesion diameter 3.1 to 4.0 cm

11446 lesion diameters over 4.0 cm

(For unusual or complicated excision, add modifier '-22')
(For eyelids involving more than skin, see also 67800 et seq)

11450- Excision of skin and subcutaneous tissue for hidradenitis, axillary; with simple or intermediate repair

11451 with complex repair

11462- Excision of skin and subcutaneous tissue for hidradenitis, inguinal; with simple or intermediate repair

11463 with complex repair

11470- Excision of skin and subcutaneous tissue for hidradenitis, perianal, perineal, or umbilical; with simple or intermediate repair

11411 with complex repair

(When skin graft or flap is used for closure, use appropriate procedure code in addition) (For bilateral procedure, add modifier "-50")

Excision -Malignant Lesions

Excision (including simple closure) of malignant lesion of skin or subcutaneous tissues including local anesthesia, each lesion. For removal of malignant lesions of skin *by any* method other than excision, as defined above, see destruction codes 17000-17999.

Excision is defined as full-thickness (through the dermis) removal of the following lesions and includes simple (non-layered) closure. The closure of defects created by incision, excision, or trauma may require intermediate (layered) closure. Layered closure involves dermal closure with separate suture closure of at least one of the deeper layers of subcutaneous and non-muscle fascial tissues. (For excision of lesions requiring more than simple closure, i.e.: requiring

intermediate, complex, or reconstructive repair, see 12031-12057,13100-13160,14000-14300,15000, 15261,15570-15770)

11600- Excision, malignant lesion, trunk, arms, or leg; lesion diameter 0.5 cm or less 11601

lesion diameter 0.6 to 1.0 cm

11602 lesion diameter 1.1 to 2.0 cm

11603 lesion diameter 2.1 to 3.0 cm

11604 lesion diameter 3.1 to 4.0 cm

11606 lesion diameter over 4.0 cm

11620- Excision, malignant lesion, scalp, neck, hands, feet, genitalia; lesion diameter 0.5 cm or less

11621 lesion diameter 0.6 to 1.0 cm

11622 lesion diameter 1.1 to 2.0 cm

11623 lesion diameter 2.1 to 3.0 cm

11624 lesion diameter 3.1 to 4.0 cm

11626 lesion diameters over 4.0 cm

11640- Excision, malignant- lesion, face, ears, eyelids, nose, lips; lesion diameter 0.5 cm or less

11641 lesion diameter 0.6 to 1.0 cm

11642 lesion diameter 1.1 to 2.0 cm

11643 lesion diameter 2.1 to 3.0 cm

11644 lesion diameter 3.1 to 4.0 cm

11646 lesion diameters over 4.0 cm

(For eyelids involving more than skin, see also 67800 et seq)

Destruction

Destruction means the ablation of benign, premalignant or malignant tissues by any method, with or without curettement, including local anesthesia, and not usually requiring closure.

Any method includes electrosurgery, cryosurgery, laser and chemical treatment. Lesions include condylomata, papillomata, molluscum contagiosum herpetic lesions, warts (i.e., common, plantar, flat), milia, or other benign, premalignant (i.e., actinic keratoses), or malignant lesions.

(For destruction of lesion(s) in specific anatomic sites, see 40820, 46900-46917, 46924, 54050-54057,54065, 56501,56515,57061 ,57065,67850,68135)

(For paring or cutting of benign hyperkeratotic lesions (i.e., corns or calluses), see 11055-11057)

(For sharp removal or electrosurgical destruction of skin tags and fibrocutaneous tags, see 11200, 11201)

(For cryotherapy of acne, use 17340)

(For initiation or follow-up care of topical chemotherapy (i.e., 5-FU or similar agents), see appropriate office visits)

(For shaving of epidermal or dermal lesions, see 11300-11313)

Destruction, Benign or Premalignant Lesions

17000* - Destruction by any method, including laser, with or without surgical curettement, all benign or premalignant lesions (i.e., actinic keratoses) other than skin tags or cutaneous vascular proliferative lesions, including local. anesthesia; first lesion

(117001, 17002 have been deleted. To report, see 17003,17004)

+ 17003 - Second through 14 lesions, each (List separately in addition to code for first lesion) (Use 17003 in conjunction with code 17000)

11004- Destruction by any method, including laser, with or without surgical curettement, all benign or premalignant lesions (i.e., actinic keratoses) other than skin tags or cutaneous vascular proliferative lesions, including local anesthesia, 15 or more lesions

(Do not report 17004 in conjunction with codes 17000-17003)

(17010 has been deleted. To report, see specific anatomic site code) (17100- 17105 has been deleted. To report, see 17000,17003, 170004)

+=Add-on Code * = Service Includes Surgical Procedure Only: =Modifier '-51' exempt