

Skin neoplasms

There are three main types of skin cancer:

- basal cell carcinoma,
- squamous cell carcinoma (together referred to as nonmelanoma skin cancer),
- and melanoma.

Basal cell carcinoma and squamous cell carcinoma are the most common forms of skin cancer but have substantially better prognoses than the less common but generally more aggressive melanoma.

Skin neoplasms

- BCC (carcinoma basocellulare)
- SCC (carcinoma spinocellulare)
- Melanoma of the skin

- Dermatofibroma recidivans protuberans, dermatofibrosarcoma recidivans
- Merkel tumor

- Haemangiosarcoma
- Sarcoma Kaposi
- Morbus Bowen, extramammary morbus Paget

- Marjolin ulcer - malignant tumors arising in scars

EUROCARE 3 (1990- 1994) and EUROCARE 4 (1995 - 1999)

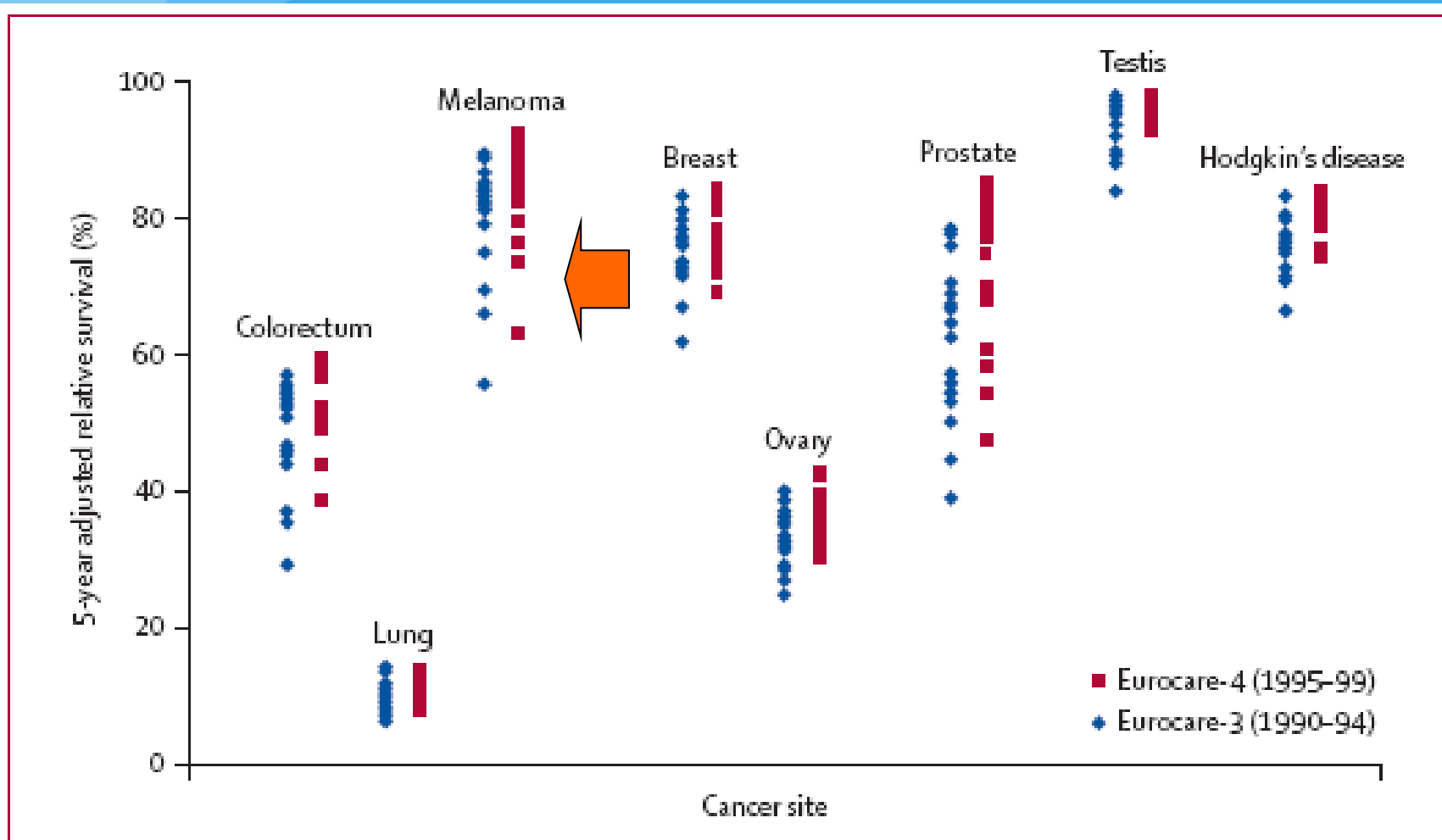


Figure 5: Changes in 5-year age-adjusted relative survival from EUROCARE-3 (1990-94) to EUROCARE-4 (1995-99)

Primary and secondary prophylaxis of melanoma

Epidemiologic evidence suggests that

- exposure to ultraviolet (UV)
- radiation
- and the sensitivity of an individual's skin to UV radiation

are risk factors for skin cancer, though the type of exposure (high-intensity and short-duration vs. chronic exposure) and pattern of exposure (continuous vs. intermittent) may differ among the three main types of skin cancer.

UV in skin neo

- Increased cumulative sun exposure is a risk factor for **nonmelanoma** skin cancer
- The relationship between UV radiation exposure and cutaneous **melanoma** is less clear.
- Rather than cumulative sun exposure, it is intermittent acute sun exposure leading to sunburn that seems to be more damaging.
- such exposures in childhood or adolescence may be particularly important

UV in MM

The best approach seems to be

- education about the risks associated with sun exposure and sunburn
- and education about sun protection strategies.

Prophylaxis

- The visible evidence of susceptibility to skin cancer (skin type and precancerous lesions)
- and of sun-induced skin damage (sunburn and solar keratoses)
- and the ability of an individual to modify sun exposure

provide the basis for implementation of programs for the primary prevention of skin cancer.

MM screening

The only widely proposed screening procedure for melanomatous skin cancer is visual examination of the skin, including both

- self examination
- and clinical examination.

Primary and secondary prophylaxis of melanoma

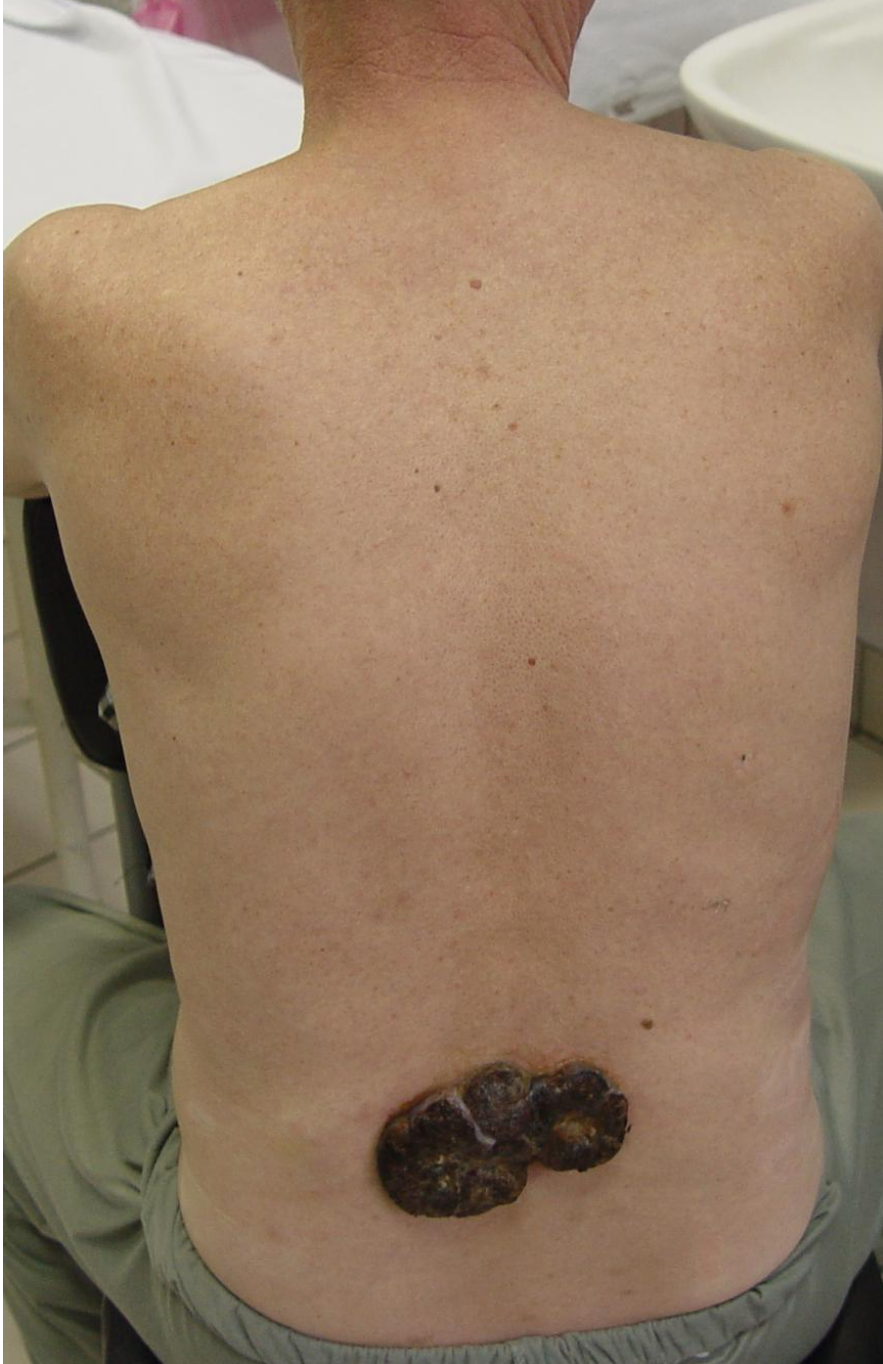
- **Marks R:** Two decades of the public health approach to skin cancer control in Australia: why, how and where are we now? *Australas J Dermatol* 1999, 40,1.
- **Wingo PA, Ries LA, Rosenberg HM, Miller DS, Edwards BK:** Cancer incidence and mortality, 1973-1995: a report card for the U.S. *Cancer* 1998, 82(6), 1197-1207.
- **Berwick M, Begg CB, Fine JA, Roush GC, Barnhill RL.** Screening for cutaneous melanoma by skin self-examination. *J Natl Cancer Inst* 1996, 88(1), 17-23.
- **Friedman RJ, Rigel DS, Kopf AW:** Early detection of malignant melanoma: the role of physician examination and self-examination of the skin. *CA Cancer J Clin* 1985, 35(3), 130-151.

Malignant melanoma (MM)

- Melanoma is a malignant tumor of melanocytes, which are the cells that make the pigment melanin and are derived from the neural crest.
- Although most melanomas arise in the skin, they may also arise from mucosal surfaces or at other sites to which neural crest cells migrate.
- Melanoma occurs predominantly in adults, and more than 50% of the cases arise in apparently normal areas of the skin.

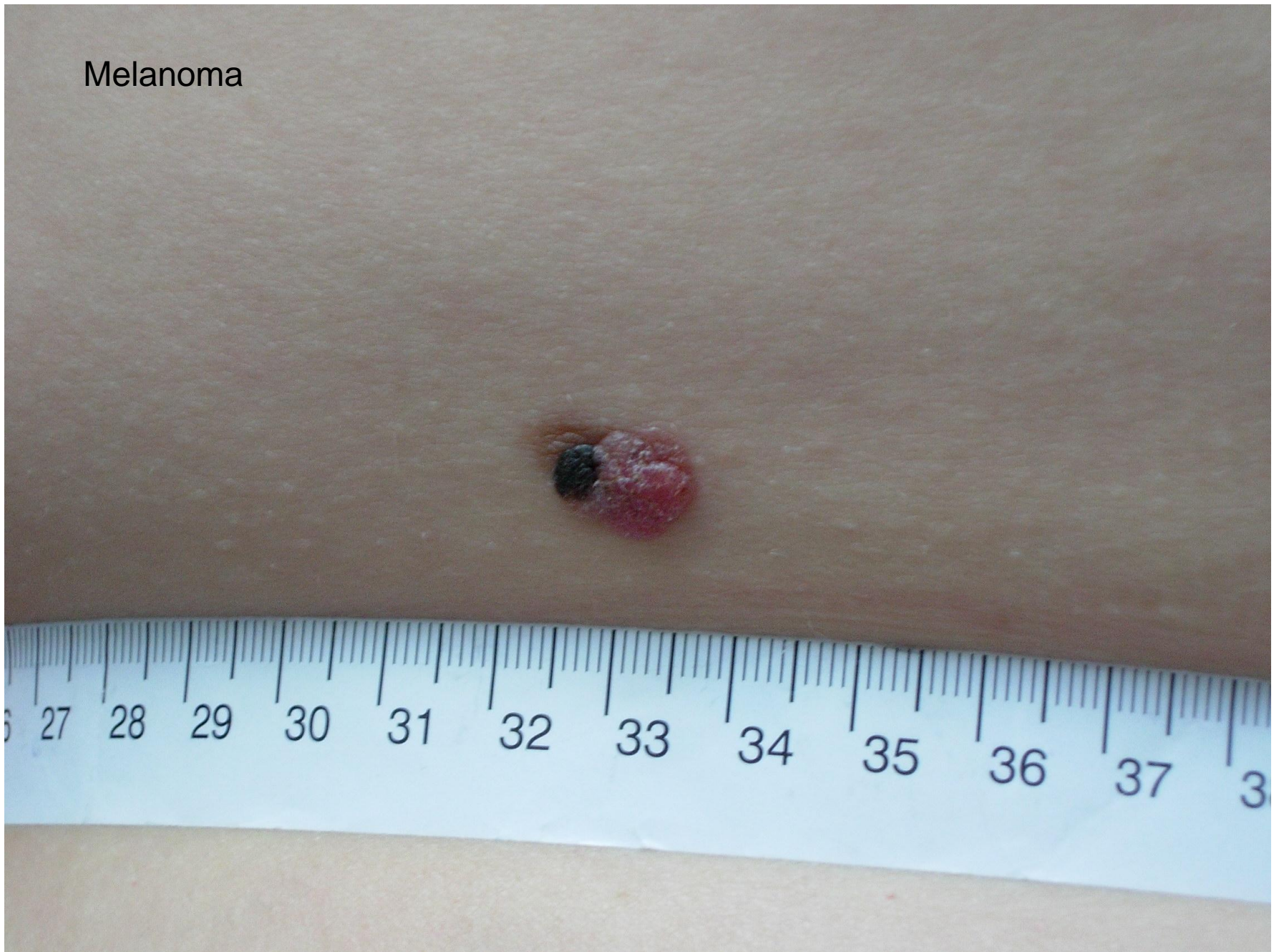
MM symptoms and signs

- Early signs in a nevus that would suggest malignant change include darker or variable discoloration, itching, an increase in size, or the development of satellites.
- Ulceration or bleeding are later signs.
- Melanoma in women occurs more commonly on the extremities and in men on the trunk or head and neck, but it can arise from any site on the skin surface.
- A biopsy, preferably by local excision, should be performed for any suspicious lesions, and the specimens should be examined by an experienced pathologist to allow for microstaging.
- Suspicious lesions should never be shaved off or cauterized.



Melanoma

Melanoma



melanoma







Czerniak skóry



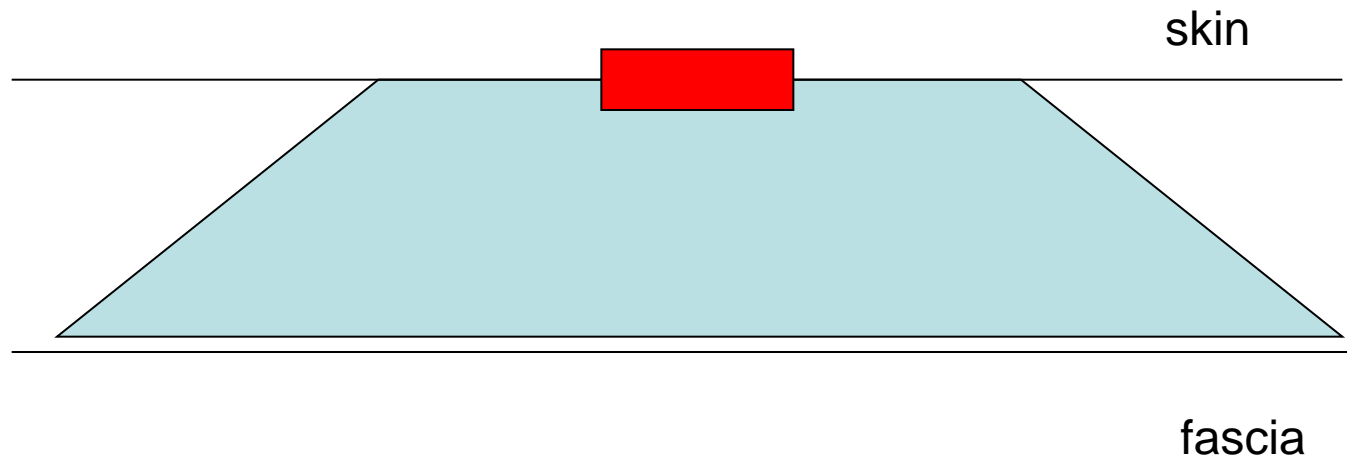


Early melanoma treatment

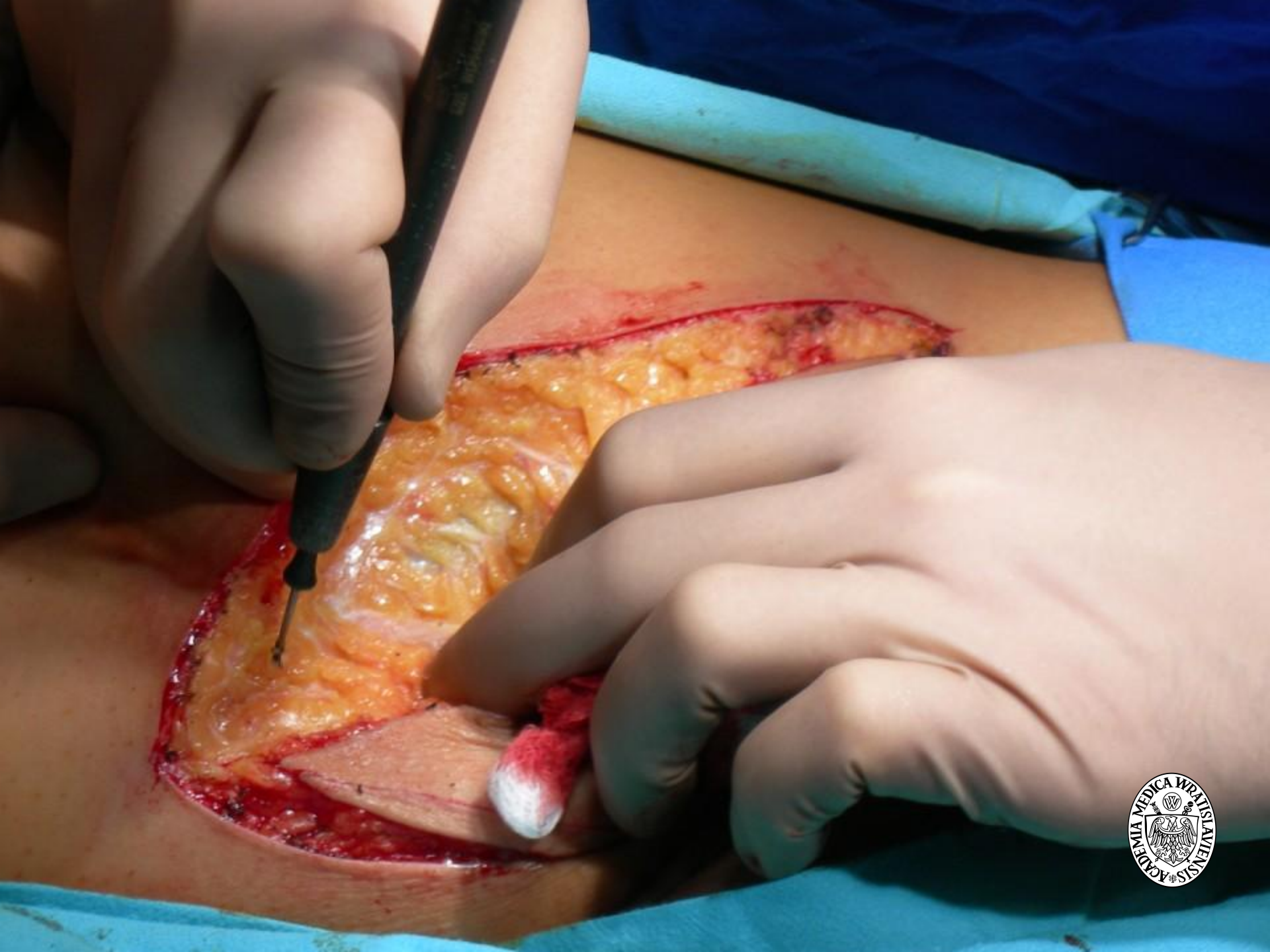
Melanomas that have not spread beyond the site at which they developed are highly curable. Most of these are thin lesions that have not invaded beyond the papillary dermis (Clark level I–II; Breslow thickness ≤ 1 mm).

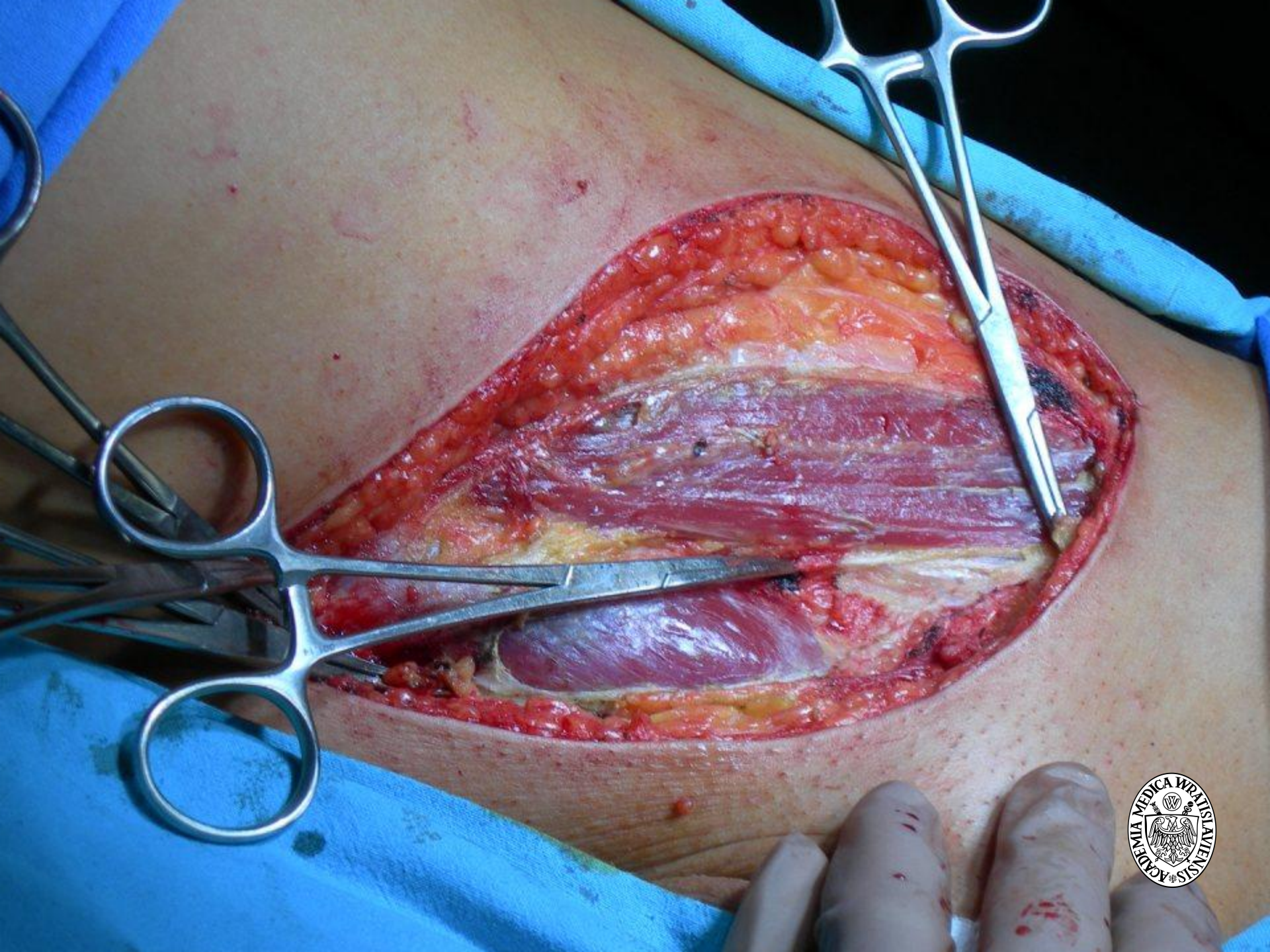
The treatment of localized melanoma is surgical excision with margins proportional to the microstage of the primary lesion; for most lesions 2 mm or less in thickness, this means 1 cm radial re-excision margins

Melanoma excision – technical details









Melanoma treatment

- Melanomas with a Breslow thickness of 2 mm or more are still curable in a significant proportion of patients, but the risk of lymph node and/or systemic metastasis increases with increasing thickness of the primary lesion.
- For most melanomas more than 2 mm to 4 mm in thickness, this means 2 cm to 3 cm radial excision margins.
- These patients should also be considered for sentinel lymph node biopsy followed by complete lymph node dissection if the sentinel node(s) are microscopically or macroscopically positive. Sentinel node biopsy should be performed prior to wide excision of the primary melanoma to ensure accurate lymphatic mapping.

Melanoma treatment - SLNB

- Using a vital blue dye and a radiopharmaceutical agent, which are injected at the site of the primary tumor, the first lymph node in the lymphatic basin that drains the lesion can be identified, removed, and examined microscopically.
- If metastatic melanoma is detected, a complete regional lymphadenectomy can be performed in a second procedure.
- To ensure accurate identification of the sentinel lymph node, lymphatic mapping and removal of the sentinel lymph node should be performed prior to wide excision of the primary melanoma.

Melanoma treatment

- Melanoma that has spread to distant sites is rarely curable with standard therapy, though high-dose interleukin-2 (IL-2) has been reported to produce durable responses in a small number of patients
- In patients with systemic metastasis confined to one anatomic site, long-term survival is occasionally achieved by complete resection of all metastatic disease

Melanoma treatment

- Recurrent melanoma is resistant to most standard systemic therapy, and all newly diagnosed patients should be considered candidates for clinical trials.
- Surgery is the most efficacious therapy for isolated recurrence in sites where it can be accomplished (including lymph node, skin, brain, lung, liver, and gastrointestinal sites).

Prognosis in MM

Prognosis is affected by clinical and histological factors and by anatomic location of the lesion.

- **thickness and/or level of invasion of the melanoma,**
- **ulceration or bleeding at the primary site**
- number of regional lymph nodes involved,
- mitotic index, presence of tumor infiltrating lymphocytes,

NON MELANOMA Skin Cancer

- **Skin cancer that forms in basal cells (small, round cells in the base of the outer layer of skin) is called basal cell carcinoma.**
- **Skin cancer that forms in squamous cells (flat cells that form the surface of the skin) is called squamous cell carcinoma.**
- **Skin cancer that forms in neuroendocrine cells (cells that release hormones in response to signals from the nervous system) is called neuroendocrine carcinoma of the skin (Merkel Tumor)**
- **Most skin cancers form in older people on parts of the body exposed to the sun or in people who have weakened immune systems.**

NMSC





NMSC

Marjolin ulcer











Rak skóry





Rak skóry





Rak skóry



Rak skóry





Rak skóry



NMSC

- **Estimated new cases and deaths** from skin (nonmelanoma) cancer in the United States in 2008:

New cases: more than 1,000,000

Deaths: less than 1,000

NMSC

- Basal cell carcinoma rarely metastasizes, and thus a metastatic work-up is usually not necessary.
- Regional lymph nodes should be routinely examined in all cases of squamous cell carcinoma, especially for high-risk tumors appearing on the lips, ears, perianal and perigenital regions, or high-risk areas of the hand.
- In addition, regional lymph nodes should be examined in cases of squamous cell carcinoma arising in sites of chronic ulceration or inflammation, burn scars, or sites of previous radiation therapy treatment.

Basal cell carcinoma

- Basal cell carcinoma is at least three times more common than squamous cell carcinoma in nonimmunocompromised patients.
- It usually occurs on sun-exposed areas of skin, and the nose is the most frequent site.
 - Although there are many different clinical presentations for basal cell carcinoma, the most characteristic type is the asymptomatic nodular or nodular ulcerative lesion that is elevated from the surrounding skin and has a pearly quality and contains telangiectatic vessels.
 - Basal cell carcinoma has a tendency to be locally destructive. High-risk areas for tumor recurrence include the central face (e.g., periorbital region, eyelids, nasolabial fold, or nose-cheek angle), postauricular region, pinna, ear canal, forehead, and scalp.
 - A specific subtype of basal cell carcinoma is the morpheaform type. This subtype typically appears as a scar-like, firm plaque. Because of indistinct clinical tumor margins, the morpheaform type is difficult to treat adequately with traditional treatments.

Squamous cell carcinoma

- Squamous cell tumors also tend to occur on sun-exposed portions of the skin such as the ears, lower lip, and dorsa of the hand.
- However, squamous cell carcinomas that arise in areas of non-sun-exposed skin or that originate de novo on areas of sun-exposed skin are prognostically worse since they have a greater tendency to metastasize.
- Chronic sun damage, sites of prior burns, arsenic exposure, chronic cutaneous inflammation as seen in long standing skin ulcers, and sites of previous x-ray therapy are predisposed to the development of squamous cell carcinoma.

Actinic keratosis

- Actinic keratoses are potential precursors of squamous cell carcinoma.
- These typical red scaly patches usually arise on areas of chronically sun-exposed skin, and are likely to be found on the face and dorsal aspects of the hand.
- Although the vast majority of actinic keratoses do not become squamous cell carcinomas, as many as 5% of actinic keratoses will evolve into this locally invasive carcinoma. Due to this premalignant potential, the destruction of actinic keratoses is advocated.

ROGOWACENIE SŁONECZNE



NMSC treatment

- The traditional methods of treatment involve the use of cryosurgery, radiation therapy, electrodesiccation and curettage, and simple excision. Each of these methods is useful in specific clinical situations. Depending on case selection, these methods have cure rates ranging from 85% to 95%.
- Mohs micrographic surgery has the highest 5-year cure rates for surgical treatment of both primary (96%) and recurrent (90%) tumors. This method uses microscopic control to evaluate the extent of tumor invasion.

Mohs micrographic surgery

Although this method is complicated and requires special training, it has the highest cure rate of all surgical treatments because the tumor is microscopically delineated until it is completely removed. While other treatment methods for recurrent basal cell carcinoma have failure rates of about 50%, cure rates have been reported at 96% when treated by Mohs micrographic surgery. In addition, its use is indicated for the treatment of primary basal cell carcinomas when they occur at sites known to have a high initial-treatment failure rate with traditional methods (e.g., periorbital area, nasolabial fold, nose-cheek angle, posterior cheek sulcus, pinna, ear canal, forehead, scalp, or tumors arising in a scar). Mohs micrographic surgery is also indicated for:

- Tumors with poorly defined clinical borders.
- Tumors with diameters more than 2 cm.
- Tumors with histopathologic features showing morpheaform or sclerotic patterns.
- Tumors arising in regions where maximum preservation of uninvolved tissue is desirable such as the eyelid, nose, finger, and genitalia.

Simple excision with frozen or permanent sectioning for margin evaluation.

- This traditional surgical treatment usually relies on surgical margins ranging from 3 mm to 10 mm, depending on the diameter of the tumor.
- Tumor recurrence is not uncommon because only a small fraction of the total tumor margin is examined pathologically.
- Recurrence rate for primary tumors more than 1.5 cm in diameter is at least 12% within 5 years; if the primary tumor measures more than 3 cm, the 5-year recurrence rate is 23.1%. Primary tumors of the ears, eyes, scalp, and nose have recurrence rates ranging from 12.9% to 25%.

Electrodesiccation and curettage

- This method is the most widely employed method for removing primary basal cell carcinomas.
- Although it is a quick method for destroying the tumor, adequacy of treatment cannot be assessed immediately since the surgeon cannot visually detect the depth of microscopic tumor invasion.
- Tumors with diameters ranging from 2 mm to 5 mm have a 15% recurrence rate after treatment with electrodesiccation and curettage. When tumors more than 3 cm are treated with electrodesiccation and curettage, a 50% recurrence rate should be expected within 5 years.

Cryosurgery

- Cryosurgery may be considered for patients with small, clinically well-defined primary tumors. It is especially useful for debilitated patients with medical conditions that preclude other types of surgery. Caution should also be used before treating nodular ulcerative neoplasia more than 3 cm, carcinomas fixed to the underlying bone or cartilage, tumors situated on the lateral margins of the fingers and at the ulnar fossa of the elbow, or recurrent carcinomas following surgical excision. Significant morbidity is associated with the use of cryosurgery.
- Edema is common following treatment, especially around the periorbital region, temple, and forehead. Treated tumors usually exude necrotic material after which an eschar forms and persists for about 4 weeks. Permanent pigment loss at the treatment site is unavoidable. Atrophy and hypertrophic scarring have been reported as well as instances of motor and sensory neuropathy.

Radiation therapy

- Radiation therapy is a logical treatment choice, particularly for patients with primary lesions requiring difficult or extensive surgery (e.g., eyelids, nose, or ears).
- Radiation therapy eliminates the need for skin grafting when surgery would result in an extensive defect.
- Cosmetic results are generally good to excellent with a small amount of hypopigmentation or telangiectasia in the treatment port. Radiation therapy can also be used for lesions that recur after a primary surgical approach.
- Radiation therapy is contraindicated for patients with xeroderma pigmentosum, epidermodysplasia verruciformis, or the basal cell nevus syndrome because it may induce more tumors in the treatment area.

NMSC treatment

- **Carbon dioxide laser.** This method is most frequently applied to the superficial type of basal cell carcinoma. It may be considered when a bleeding diathesis is present, since bleeding is unusual when this laser is used.
- **Topical fluorouracil (5-FU).** This method may be helpful in the management of selected patients with superficial basal cell carcinomas. Careful and prolonged follow-up is required, since deep follicular portions of the tumor may escape treatment and result in future tumor recurrence.
- **Interferon alpha.** Several early studies have shown variable responses of basal cell carcinoma to intralesional interferon alpha. Further reports are awaited until this treatment may be recommended for routine clinical practice.
- **Photodynamic therapy.** Photodynamic therapy with photosensitizers may be effective treatment for patients with superficial epithelial skin tumors.

Follow-up:

- Following treatment for basal cell carcinoma, patients should be clinically examined every 6 months for 5 years.
- Thereafter, patients should be examined for recurrent tumors or new primary tumors at yearly intervals.
- Of the patients who develop a basal cell carcinoma, 36% will develop a second primary basal cell carcinoma within the next 5 years.
- Early diagnosis and treatment of recurrent basal cell carcinomas or another primary basal cell carcinoma is desirable since the treatment of the disease in its earliest stages results in less patient morbidity.

Edukacja onkologiczna!

- A – asymetry
- B – borders irregularity
- C – color change
- D – diameter
- E – elevation
- F – fenomena

A + B + C + D + E + F



Early diagnosis

- More than 90% of melanomas that arise in the skin can be recognized with the naked eye.
- Very often, there is a prolonged horizontal growth phase during which time the tumor expands centrifugally beneath the epidermis but does not invade the underlying dermis.
- This horizontal growth phase may provide lead time for early detection. Melanoma is more easily cured if treated before the onset of the vertical growth phase with its metastatic potential. [