EUROPEAN ACADEMY OF DERMATOLOGY & VENEREOLOGY

Information Leaflet for Patients

Tattoos and Chronic Inflammatory Reactions

The aim of this leaflet

This leaflet is designed to help patients and tattoo artists who have experienced chronic inflammatory reactions within tattoos, as well as patients with systemic sarcoidosis, understand when and how tattooing can be performed safely.

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Tattoos and Chronic Inflammatory Reactions

What are chronic inflammatory reactions within tattoos?

They are non-allergic complications of tattoos. This means they are not caused by an allergy and there are no signs of infection. The immune system may recognize pigment particles as foreign material and try to remove them.

This can lead to:

- local inflammation
- formation of granulomas (clusters of immune cells)Contact eczema due to an aftercare product applied during tattoo healing.

The reactions happen mostly in black ink tattoos, as the black pigment particles can collect together in the skin and form small clumps. Tattoos with large amounts of black ink are more likely to cause inflammation. However, reactions can also occur in tattoos of other colors.

What causes these reactions?

The exact cause is not fully understood. The reaction likely depends on individual susceptibility.

Possible contributing factors include:

- repeated skin trauma during tattooing
- introduction of foreign substances (tattoo pigments) into the skin

What do these skin changes look like?

Typical features include:

- bumps and lumps
- elevation of the whole tattoo

These changes may:

- affect part or all of the tattoo
- occur more often in areas with dense black pigment
- develop weeks, months, or even numerous years – up to decades! - after tattooing

They may sometimes cause itching or tenderness, but many patients experience no symptoms.

Can reactions appear in more than one tattoo?

Yes, it can.

The reaction can occur in:

- a single tattoo
- multiple tattoos at the same time
- It may first appear in one tattoo and later affect other tattoos. This phenomenon has been called “rush phenomenon” and may indicate an underlying systemic condition, called sarcoidosis.

Can these reactions be linked to other diseases?

Yes. They may be associated with:

- Sarcoidosis – a disease that can affect lungs, lymph nodes, skin, eyes, and heart
- TAGU (Tattoo-Associated Granulomas and Uveitis) – a rare condition affecting tattooed skin and eyes

Can tattoo reactions be the first sign of sarcoidosis?

Yes. They can appear before, occur together with, or remain the only sign of the disease.

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How are chronic inflammatory reactions within tattoos diagnosed?

Diagnosis usually involves taking a skin biopsy, which often shows granulomatous inflammation.

Because it is sometimes difficult to distinguish between different types of granulomas, further laboratory tests and imaging may be recommended.

Which diagnostic test may be needed in patients with chronic inflammatory reactions within tattoos?

Screening may include:

- chest X-ray or CT scan
- blood tests
- abdominal ultrasound
- heart examination
- eye examination
- dermatological assessment of the whole skin.

The choice of the screening tests may vary according to health care centers.

Is there a higher risk of systemic disease?

Yes. Patients who develop nodular reactions in black tattoos may have an increased risk of sarcoidosis, even if initial screening is negative. They should be informed that this risk is low but not negligible and be advised to seek medical evaluation if any new or concerning symptoms develop. In some cases, long-term follow-up may be necessary.

How are chronic inflammatory reactions within tattoos treated?

Treatment includes topical corticosteroids (creams or ointments), steroid injections into the lesions, or oral corticosteroids. Alternative options may include allopurinol gel and oral hydroxychloroquine, which helps regulate the immune response.

In treatment-resistant cases, removal of the tattoo may be considered, either with laser therapy or surgical excision.

TAGU requires intensive immune-suppressive treatment.

Emerging therapies, such as JAK inhibitors (e.g., abrocitinib), have shown promising results in difficult cases, although they are not yet standard treatment.

Patients with systemic involvement should be treated by a multi-disciplinary medical team.

Can patients with a personal history of sarcoidosis get a tattoo?

In general, tattooing is not recommended for patients with active sarcoidosis, which means that the disease is still active in the body – the immune system is causing ongoing inflammation, and symptoms of the disease may appear or persist (e.g. in the lungs, skin, lymph nodes, or other organs). This means that the disease is not currently in full remission and may require treatment or adjustments to ongoing treatment.

If the disease is well-controlled and in long-term remission, tattooing may be considered in selected cases, but only after consultation with a physician (e.g. dermatologist or specialist managing sarcoidosis).

Important points to consider:

- Patients diagnosed with sarcoidosis are not strictly contraindicated from getting a tattoo
- Sarcoidal granulomas may appear within tattoos, especially in black ink
- Sarcoidal skin lesions might develop within the tattoo during disease flare-ups

If a patient decides to proceed, it is advised to:

- choose an experienced tattoo artist
- avoid large or densely pigmented (especially black) tattoos
- monitor the skin after the procedure

General advice to patients who plan to get a tattoo

- Inform your tattoo artist about your medical history. Especially if you have had previous tattoo reactions or inflammatory skin conditions.
- Consult a doctor if you have a history of granulomatous reactions. Medical advice is recommended before getting another tattoo.
- Be cautious if you have (or had) sarcoidosis. Consult your physician to determine the best timing for tattooing.
- If you notice persistent papules or nodules within a tattoo that appeared weeks, months, or even years after tattooing seek medical advice. Early diagnosis can help prevent progression and complications.

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