

1 **Question 1**

2 **Which local flap procedures should all orthopaedic trauma surgeons be**
3 **trained to perform in emergencies?**

4 **Background**

5 Soft-tissue coverage is a critical component of open fracture management. Delays in
6 achieving durable coverage increase the risk of infection, osteomyelitis, nonunion,
7 and limb loss. While complex free tissue transfer is usually performed by plastic or
8 reconstructive surgeons, orthopaedic trauma surgeons may encounter situations
9 where immediate coverage is required and specialist support is unavailable. In such
10 settings, knowledge of reliable local flaps can preserve exposed bone, tendon,
11 vessels, and implants until definitive reconstruction is available.

12 The ideal emergency flap should be technically straightforward, reproducible, have a
13 predictable blood supply, and be applicable in most trauma centers. Current
14 orthoplastic principles emphasize early coverage using local tissue whenever
15 feasible.

16 **Suggested Consensus Statement**

17 All orthopaedic trauma surgeons managing open fractures should be familiar with
18 and able to perform a limited set of reliable emergency local flaps that provide
19 temporary or definitive coverage of exposed bone, tendon, neurovascular structures,
20 and implants.

21 **Core Flaps Recommended for Training**

Region	Essential Local Flap
Leg (proximal third)	Medial gastrocnemius flap
Leg (middle third)	Soleus muscle flap
Distal third leg/ankle	Reverse sural artery flap
Knee	Medial gastrocnemius flap
Foot/heel	Reverse sural flap
Upper limb	Radial forearm flap and local rotational fasciocutaneous flaps
Hand	Cross-finger flap, thenar flap, first dorsal metacarpal artery flap

22 **Recommendation**

23 Every orthopaedic trauma surgeon should be trained in:

- 24 1. Medial gastrocnemius flap
- 25 2. Soleus flap
- 26 3. Reverse sural flap
- 27 4. Basic rotational fasciocutaneous flaps
- 28 5. Cross-finger and local hand flaps

29 These procedures represent the minimum reconstructive skill set required to manage
30 emergency soft-tissue defects before referral or definitive reconstruction.

31 **Level of Evidence**

32 Moderate

