

Road Rash—Abrasion

This most common of bicycling injuries can be treated in different ways. The right way reduces healing time and scarring, and allows you to return to your bike promptly.



CYCLE HANDOUT

Prevention

- Learn bike handling skills to help prevent falling.
- Obey the rules of the road.
- Ride defensively, especially in traffic and around squirrely riders.
- Keep equipment in top working order.
- Always wear a helmet and gloves.
- Unless it is too hot, wear an undershirt layer.

Emergency Room/Medical Help

Some injuries require prompt emergency room care because the window of opportunity for proper treatment is narrow.

Go to the emergency room if:

- You can see through torn or abraded skin to structures underneath.
- You have skin hanging from the wound that needs trimming.
- You have cuts that need stitching.
- You don't have full range of motion in any of your joints, if you can't walk with full weight on your hips. You may have chipped or broken a bone.
- You have pain in your hand or wrist. You may have a broken bone.
- You were knocked out or had mental confusion after your fall. You may have bleeding in or around your brain.

Consult a medical professional with any questions you have about the extent of your injuries or your treatment.

Treatment Objectives

The objective of treatment is to heal the tissues as rapidly and effectively as possible. The goals of therapy include preventing further damage to the skin and not allowing the depth of the rash to increase in severity.

What can go wrong? The rash can heal with scarring. The rash can take longer to heal than needed, because of infection, for example. Or the rash can heal well, but be more painful than necessary during the healing process.

Grading Road Rash

The severity of road rash is similar to that of burns. Rash can be

First degree. Only the surface is reddened. This problem does not require active treatment.

Second degree. The surface layer of the skin is broken, but a deep layer remains that will allow the skin to replace itself and heal without significant scarring.

Third degree. The skin is entirely removed, perhaps with exposure of underlying layers of fat and other supporting tissue structures. Such damage may require skin grafting and is beyond the scope of this handout. Seek immediate medical attention.



Figure 1. Second-degree road rash, right upper back. Day 3. Soft, whitish exudates forming in the centers.

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Not Going to the ER?

Most riders can handle the treatment of second-degree road rash themselves or with a little help from a friend.

Old-Style Treatment—Let it Scab

There are two general methods of treatment for second-degree road rash. The first is the traditional “let nature take its course” approach, which is also called the open method.

Clean the wound with soap and water, hydrogen peroxide, an iodide, or something similar. Allow the wound to dry out, form a scab, and “heal on its own.”

This method has its drawbacks for all but the most superficial, small road rashes.

Just because you clean it once, doesn’t mean it won’t get infected. Bacteria thrive on damaged skin. Infection can deepen the depth of the rash, meaning that scarring and delayed healing are more likely.

Scabs can crack and become painful.

Scabbed areas don’t receive oxygen well from the surrounding air, and so take much longer to heal.

If you didn’t know better, you might think this is the best way to treat road rash. But, now, you know better. Read on!

Modern Thinking—Cover It

The alternative is the closed approach: frequent cleansings and the application of topical antibiotics and dressings that keep the road rash moist and prevent scab formation.

Initial Cleaning

Alcohol or iodine? Yeow! Hydrogen peroxide? These old-style or in-the-field treatments sting, have only modest value, and may slow healing.

Best: Irrigate at the crash site with water or saline and get home or elsewhere pronto to clean with copious water and plain soap.

Clean away road debris. Trim dead skin. Go to an ER or urgent care promptly if you can’t get the road dirt completely out of the abrasion, to trim skin, or to suture repairable cuts.

Use water at body temperature. New road rash is sensitive to water-temperature. Water hotter or colder than body temperature causes unnecessary pain.

After a few minutes of body-temperature water exposure, you can increase the water temperature a few degrees if you prefer a warmer soak.

After a few minutes in a bath, a shower (fixed or portable sprayer) can also help clean the area.

Gently scrub away road debris if necessary. Avoid vigorous scrubbing that may further damage tissues.

Topical Antibiotics

My favorite is the standard antibiotic used in burn treatment: prescription silver sulfadiazine (Silvadene, Monarch).

Persons allergic to sulfa drugs should avoid sulfadiazine. Sulfadiazine commonly stains clothing.

Over-the-counter antibiotics such as Neosporin (Pfiser) and Polysporin (Pfiser) are alternatives.

Cover With a Dressing

After bathing, cover the wound.

You’ll want a dressing next to the wound that won’t stick to it. That rules out plain gauze.

Traditional Dressing

- (1) Apply an antibiotic
- (2) Place Vaseline gauze (e.g., Adaptic, Johnson & Johnson) over the antibiotic. This is a non-stick mesh that allows removal of the dressing without sticking.
- (3a) For arms and legs, wrap conforming gauze roll around the area and tape it in place.
- 3b) For areas that cannot be wrapped easily (for example, the hip or back), use gauze squares and tape in place.
- (4a) Finally, for arms and leg, use tube-stretch gauze (e.g., Tubigauze, Acme) or self-adherent wrap (e.g. Coban, 3M) over the other gauze layers to keep everything in place and tidy.



Figure 2. Elbow wrapped with a conforming gauze roll and held in place with tube-stretch gauze.

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Favorite Dressing

A moisture-barrier covering such as Tegaderm (3M) or Bioclusive (Johnson and Johnson) alone may be stretched over the antibiotic.

The result is a dressing that allows a minimalist approach: protection of the wound, minimum risk of infection, prevention of scabbing and its attendant cracking and pain, and fast healing.

This is best after a few days, when wound weeping stops. Until that time, a gauze covering will absorb fluids and prevent staining of clothes and furniture.

Otherwise, you may lift an edge of moisture-barrier coverings several times a day to allow drainage.



Figure 3. Road rash on right hip covered with silver sulfadiazine and Bioclusive dressing. Day 3. The wound is still weeping, pooling with the sulfadiazine under the dressing.

Pain Medicine

Acetaminophen (Tylenol) may help control pain for the first few days.

Stronger medicines, narcotics, are sometimes needed. In this case your injuries are generally more severe than second-degree road rash and you've seen a physician.

Bathe Frequently

Clean the area at least daily with water and plain soap.

Bathe, shower, or use wet compresses. Baths and showers are best.

Gently remove superficial debris.

Soft exudates (off-white slimy films, the beginnings of scabs) form between the second and fifth days after injury. Make a gentle effort to remove these with a shower spray or by gently scrubbing with a face cloth, sponge, or the pad of a finger. Most of these exudates are removed with gentle cleaning by the end of 10 days.

For the first few days, gently rubbing with a face cloth after soaking in a bath is the least painful and most thorough method of cleaning the wound.

Pink, healthy, new skin is what you want to see. For second degree road rash this is usual between days 7 and 14.

When to Stop Covering

Second-degree road rash usually takes 2 to 3 weeks to heal.

You can then stop covering the area after all the exudates have stopped forming and have been gently rubbed away—generally in 7 to 14 days—although continued protection for another week may reduce mild discomfort and modestly improve healing.



Figure 4. Same second-degree road rash, right upper back, as shown in Figure 1. Day 14. Pink skin, no exudates. Dressings may be discontinued, though cover and protect from the sun.

Adhesive Allergy

Tape or adhesive allergy can be a problem. Paper tape is generally less irritating than plastic tape or the adhesives on moisture barrier coverings. Figure 5 shows adhesive allergy to Bioclusive.

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Figure 5. Adhesive allergy. Same wound as in Figure 3, dressing removed. Note square-shaped reddened skin around the wound from dressing.

Watch for Sunburn on Road Rash

As the skin nears complete healing you may be tempted to allow your technique to become lax and stop covering your road rash.

Exposure to sun within the first month after injury may cause the skin to remain permanently darkened after healing. Be sure to keep your rash covered until it has healed. Then use adequate (SPF >15) sunscreen.

Delayed Reactions

Damage to structures below the skin is common.

Below-the-surface-of-the-skin blood bruising is irritating to tissues. It may occur as much as a week after the initial injury as gravity pulls blood downward to previously unaffected areas.

Blistering of previously healed road rash is an uncommon but well-recognized problem that may occur months or years later, for unknown reasons.

Summary

By initially cleaning well and then often; by keeping the wounds moist and covered, healing is faster, less painful, and without scarring.

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For More Information

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www.arniebakercycling.com:

The following related publications are available:

Books

Bicycling Medicine

Handouts

Dealing With Injuries—Ride or Rest?

First Aid Kit For Bicycling

RICE Rest, Ice, Compression, Elevation;

NSAIDs: Non-Steroidal Anti-Inflammatory

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Safety

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