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FORAGES

Forage Selection

Ironically, many of the notable food-processing abnormalities observed with refeeding a starved horse are similar to metabolic problems observed with uncontrolled Type II diabetes in humans, which is more or less manifested as *insulin resistance* (IR) in obese horses. IR horses are sensitive to sugar and starches, and have driven forage research and understanding. This knowledge can be extrapolated to helping starved, metabolically deranged rescue horses.

Forage Facts

In the nutrition world, sugars and starches, along with their molecular cousins, fructans, are referred to as non-structural carbohydrates (NSC). Determining the NSC and nutrition content by simply looking at hay is impossible; it must be tested. There are a few generalities that will allow you to make an educated guess when evaluating hay (figs. 3.5 and 3.6).

Grains or sweet feeds have the highest NSC content, followed by cool-season grass hays. Cool-season grasses include timothy, orchard, and fescue (fig. 3.7). NSC is lowest

Skinny Surprise

t had taken a long time and significant effort for the authorities to get a warrant and the legal ability to confiscate some thin horses from a farm. There were over 50 horses on the property, and the animals that had a BCS of 2 or less were seized—nearly all of them. Although a rescue organization housed most of the horses, the half-dozen horses in the most critical condition were brought to the veterinary teaching hospital. One horse was so thin he died within a few days of arrival, despite the very best and most aggressive medical care.

I watched an emaciated chestnut mare with a hangdog look lean her butt against the corner of the stall. She was too weak to completely hold herself up. Her chestnut coat had a rough, coarse, unhealthy texture. She grunted every few breaths. The line taking fluids into her vein sparkled as it dripped. She was severely anemic: her red cell count was lower than I had ever seen in a live patient. Despite the fact that every angular bone in her body was visible, she was not interested in her small ration of alfalfa. She looked terrible, and I thought she might die. Even more distressing, her belly stuck out from her body. She was starved, and everyone was shocked to learn that she was maintaining a pregnancy.

Miraculously, she surprised everyone by surviving. After looking for hours like she was dying, she nickered once and began to eat. With further careful rations and care, she improved daily, and her red cell count gradually increased and normalized. The pregnancy was not lost, either.

It took months for the experienced horsewoman who adopted the mare to get her back to a healthy weight. This mare almost lost her life as her body gave all its reserves to keep her baby alive. Ultimately, a small, but otherwise healthy foal was born and survived.



3.7 Seed head types, from left to right: bluegrass-type, orchard, and timothy.

in alfalfa (a legume) and coastal bermuda (a warm-season grass hay). Other factors that affect the NSC levels in hay or forage include plant type and maturity, harvest conditions, and local farming practices, which are influenced by geography and weather.

For most horses, a high-quality, easily digestible, nutrient-dense hay is needed. If a plant is overly mature when it is baled into hay, horses won't eat it because excessive indigestible fiber makes it unpalatable (for example, coarse straw).⁴⁹

Alfalfa is the forage of choice for refeeding a starved horse: its caloric content is high because of its high protein content, but the sugar content is low. Additionally, it has high levels of electrolytes such as calcium, magnesium, and phosphorus, which can help ameliorate some of the

High NSC	Low NSC
Grains or sweet feeds	Legumes (alfalfa, clover)
Cool-season grass hays (timothy, orchard, fescue)	Warm-season grass hay (coastal bermuda)
Young, leafy plants	Mature, stemmy hay or bloomed hay
Cool night with morning harvest	Longer field drying time
Plant stress (drought, freezing) for cool-season grasses	Plant stress (drought, freezing) for warm-season grasses

3.5 Factors Affecting Non-Structural Carbohydrates

Feed	NSC	Calories per Pound
Legumes (alfalfa and clover)	9–15%	900–1050
Grass hays	7–18%	825–900
Oat hay	22%	850
Timothy	12%	800–950
Sweet feed	10-20%	1500–1800
Equine senior feed	17%	1200–1700
Oil or fat	N/A (o)	1900 calories per cup

3.6 Nutrient Content of Forage





3.8 A & B Two examples of complete feeds that can be used when a horse is unable to eat grass or hay forages.

metabolic derangements seen in refeeding syndrome.

If a horse cannot chew hay or forage, another form of roughage must be provided. Alfalfa is available in pelleted and cubed forms, as are some grasses. It is best to feed these soaked or wet because if pellets are swallowed too quickly, *choke* (where the esophagus becomes obstructed or clogged with inadequately chewed food) may occur.

OTHER FEEDS

Grains

Grains for horses are bagged and include some combination of oats, corn, barley, or beet pulp. They may be textured (sweet feed) or processed into pellets. Under no circumstances should you feed grain to your horse until at least three to four weeks into the refeeding recovery period. When you do feed grain, you should start with half a cup three times a day. All feeding changes should be gradual and cautious. If you feed grain or weight-gain supplements too early, it can impede the return to normal metabolic function, resulting in death.

When ready, a 1,000-pound horse can eat up to 10 pounds of grain in conjunction with 10 pounds of hay. Never exceed more than 50 percent of the ration as concentrated feed (grain). The higher the amount of grain that is fed, the higher the risk of colic, ulcers, and metabolic problems, so stay well below the 50 percent mark.

Complete feeds are also available. These are bagged or packaged products that include a grain component, as well as a high-fiber or roughage content. Equine senior feeds are usually made as a complete feed. Complete feeds include necessary roughage, and are designed to be fed alone. Mixing these products with other grains, such as plain oats, will violate their carefully balanced and fortified vitamin and nutrition ratios.

Choosing which grain to feed is important. An equine senior product is best for elderly horses that may not be able to chew or extract nutrients from hay efficiently. Find out how many calories per pound your feed is. Because of the higher roughage content, some complete feeds are not very calorie-dense, and might not be enough for weight gain in a thin horse.

Feeding Fats

Horses do not have a gallbladder. The purpose of the gallbladder is to store digestive enzymes produced by the liver, known as bile. Bile is released into the small intestine when a meal is eaten, and breaks down fats. Since horses have a relatively small stomach and mainly eat low-fat plants in a slow grazing manner, the gallbladder became an unnecessary appendage for them. A horse's liver has a duct that leads straight to the small intestine, which releases tiny amounts of bile as it is produced.

The lack of bile limits the ability of the horse to digest fats. Forages contain 3 to 4 percent fat, although with an adjustment period, horses can tolerate up to 20 percent of their dietary calories from fat. However, UC Davis research showed that fat supplementation in the initial refeeding period did not improve horses' recovery.⁵⁰

Beyond the refeeding period, fat supplementation is useful for increasing weight gain, particularly if a horse has trouble chewing forage. Any horse who has trouble maintaining his weight (a hard keeper) needs a diet high in digestible fiber and fat.

Many weight-building supplements are commercially available, and nearly all are based on some type of fat. Liquid oils such as canola, rice bran, flaxseed, soy, corn, or mixed vegetable oil can be top-dressed on sweet feed or pellets and fed to horses. Begin with one teaspoon twice daily, and over the next four to six weeks, work up to one half cup twice daily. A cup of these oils is about 1,950 calories—more calories than a pound of sweet feed. You may choose to use a particular oil based on cost, palatability, and omega-3 to omega-6 fatty acid ratios. Horses need more omega-6 than omega-3 fatty acids, but the omega-3 oils are more important for their beneficial properties, such as immunity, joint health, and anti-inflammatory effects.

Use of Probiotics

Horses are dependent on symbiotic microbes to digest cellulose (the fiber portion of forage). Starvation changes the bacterial population of the gut, which within the horse can result in malabsorption and/ or diarrhea. Stress can also result in certain bacterial diarrheas. Probiotics may help stabilize or restore digestive health.

There are a number of probiotic products out on the market today. Only one microbe (a member of the yeast family), Saccharyomyces boulardii, has been studied. Most equine probiotics contain S. boulardii as well as several other live cultures.⁵¹

LONG-TERM WEIGHT CHANGES

A normal, mature horse needs a minimum of 15,000 calories per day, and one in hard work may need up to double that amount. When you are trying to add weight to your horse, 20,000 calories per day is suggested. A mare in late gestation or lactation also requires more calories to meet her needs—in the range of 25,000 to 30,000 calories per day (fig. 3.9).

If you want to increase your horse's BCS by one point in two months, he must eat 6,000 extra calories per day. This amount is about four pounds of concentrated feed per day. Alternatively, increase hay intake by six to seven pounds, or pasture intake by six hours per day.

What all this information boils down to—realistically—is that it can take six months to a year of aggressive feeding to get a horse back up to a normal weight.

Monitor His Weight

To avoid discouragement, keep a diary of your horse's condition. This can be as simple as recording his BCS and weight each week on a note card that you keep in your feed room. Weekly monitoring by using a weight tape is even better and will allow you to realize that your horse is gaining weight before your eye notices. The weight tape estimates a horse's weight based on the measurement of the circumference at the girth. You can purchase a version of this specially marked tape measure from feed or tack stores or online suppliers. The tape is placed around the horse, behind the withers and elbow, right where your saddle and girth would go. Then, you line up the end of the tape and read the number (figs. 3.10 A-C).

OTHER CONSIDERATIONS FOR REFEEDING RESCUE HORSES

When you are working with an impoundment rescue or horses that have been confiscated for neglect, you may be legally

3.9 Simple Example Rations

Forage	Grain	Oil	Total Energy
Orchard grass, alfalfa mix 17 lbs x 900 cal/lb = 15,300 cal	n/a	n/a	15,300 cal
Grass hay 16 lbs x 850 cal/lb = 13,600 cal	Sweet feed 4 lbs x 1,700 cal/lb = 6,800 cal	n/a	20,400 cal
Included in complete feed	Equine senior complete feed 16 lbs x 1,250 cal/lb = 20,000 cal	n/a	20,000 cal
Alfalfa pellets 15 lbs x 950 cal/lb = 14,250 cal	Sweet feed 4 lbs x 1,700 cal/lb = 6,800 cal	2c = 3,900 cal	24,950 cal





bound to provide only "regular and ordinary" care. Proving that the horse can recover with ordinary and available food supports legal cases of neglect for prosecution, preventing rescuers from resorting to exorbitant and life-saving diagnostics, procedures, or treatments. Proof that the horse was neglected will be what prevents the former neglectful owner from legally acquiring any other horses in the future. The law in this case may be at odds with medicine. This is difficult to adhere to but is the best option we have for ensuring that a neglectful owner is convicted, and preventing them for owning and neglecting many other horses in the future.

It's also important to realize that the gut, like other tissues in the body, may not function properly after extreme starvation.

Damage that occurs during starvation may be permanent. Scarring of the digestive tract

Date	Ari	Nina	
	13:3	14.2	
10/8/15	916	1130	
12/16/15	950	1100	
5/1/16	1130	1250	TOOK AWAY SCON FEEDER
5/10/16	1130	1250	
5/19/16	1015	1190	
5/30/10	1015	1130	
6/10/16	960	1130	
7/4/16	960+	1130	
7/22/16	970	1125	GOT THE SCALE - I WEA
8/1/16	960+	1100	5 LBS EACH
8/8/16	960	1100	51Bs Aci GLBS NINA

3.10 A-C Using a weight tape to monitor a horse's condition as he improves is important. The correct location of the weight tape is around the horse, just behind the elbows and over the withers (A). This close-up view shows how to read the number in pounds (B). Recording the values allows you to more easily observe trends over time (C).

is termed intestinal fibrosis. Intestinal fibrosis results in malabsorption (a decreased ability to absorb nutrients). Chronic malabsorption in horses is known to occur after surgical removal of small intestine (a treatment for some types of colic), chronic inflammatory bowel disease, certain bacterial infections, infection with some intestinal parasites, or intestinal lymphosarcoma (a cancer).

Veterinarians involved in rescue will tell you that every starvation case is unique.⁵² It is critical that you as the rescuer understand the importance of refeeding appropriately. Weight gain can take a long time, just like starvation took a long time. As I stated previously, we expect the horse to metabolically stabilize in the first two weeks but not to gain weight. Real weight gain can take months, and a return to normalcy can take a whole year. This may mean that the horse is always a "hard keeper" who needs special attention and close monitoring.

Psychological Effects of Starvation

Not having enough food is a significant source of mental stress. In the 1940s, Ancel Keys conducted a landmark "Starvation Experiment" at the University of Minnesota. Keys documented the psychological effects of starvation on humans: subjects became depressed, listless, unable to concentrate, socially withdrawn, and apathetic.⁵³

Science does not yet fully recognize or understand the psyches of domestic or wild animals. For the sake of argument, let's assume horses experience the world in a way that affects their senses, feelings, emotions, and thought processes. Starvation has negative psychological effects on horses. "In some cases underweight horses may display abnormal behavior in relation to eating,

such as aggression during feeding time or *pica* (the ingestion of inappropriate material such as hair, dirt or gravel, or wood). These psychological conditions may not resolve, despite a return to optimum body condition." Pica has been associated with parasites, ingestion of too few calories, and deficiencies of protein, salt, phosphorus, or micronutrients.⁵⁴

A horse who has gone through a state of starvation may never behave "normally" at meal times. He may exhibit anxiety and emotional duress associated with the chronic state of hunger that he experienced.⁵⁵

Extra Winter Care for the Emaciated Horse

A thin horse who has a BCS of 3 or less may have trouble in the cold. Horses are coldadapted and will grow a heavy protective hair coat as needed. A blanket may help your horse if he has a BCS of 3 or less, and it is exceptionally cold for your area. Studies show that a horse's natural coat is best for optimal thermoregulation, 56 but without an adequate layer of fat, a rescue horse will struggle to maintain his body temperature during particularly cold temperatures.

If used, blankets should always be clean and dry. They should be removed and the horse inspected and groomed daily. A blanket or heavy hair coat can mask weight loss or weight gain.

DENTISTRY

Traditional horse-person lore purports that an old horse is also a thin horse. Good horse care requires you to abandon this mythology. If your horse is aged and has dental disease to the extent that he cannot chew



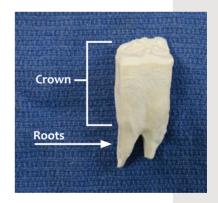
3.11 This horse is in his thirties and has been well-fed. Despite missing some teeth, his weight is appropriate. Old age is not an excuse for a thin horse.

regular hay, there are complete feed options that will meet his needs. Fortified grains and dietary supplements are available to modern horse owners. Age is no excuse for caloric deficiency—horses should be maintained at a healthy weight at every age (fig. 3.11).⁵⁷

Poor dental health can be a reason for weight loss because chewing food is the first step of digestion. A horse must chew his food well in order to digest it. Absorption of nutrients is inversely related to particle size—smaller particles have a larger overall surface area for the same amount of ingesta (food). The larger the surface area, the more absorption can occur from that particle.⁵⁸

Horses' grinding teeth are hypsodont where the root of each tooth, which brings in the blood and nerve supply, is relatively

3.12 A hypsodont horse tooth showing the short root and the relatively long crown. This tooth is from an older horse, and the long crown is even more exaggerated in a young adult horse.



small compared to the oversized crown (fig. 3.12). The long reserve crown sits below the gum line within the jaw and sinus cavities. The reserve crown erupts as needed when the exposed crown is worn down. The tooth has many ridges of alternating hard enamel folded with softer dentin, which form grinding surface. The horse moves his jaw from

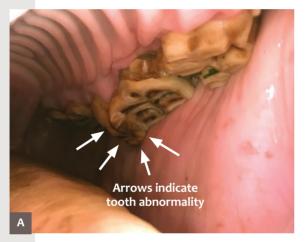
side to side to break down forage—I think of it as a built-in cornmeal grinder.

Each upper and lower molar pair should line up perfectly. As they grind away at the forage, they are worn away. The wear is countered by continual eruption, so that each arcade of teeth remains flat and functions as a large grinding surface working in concert.

Trouble occurs when the teeth don't

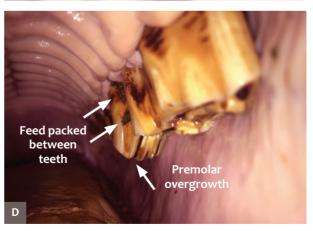
match up perfectly or horses are fed lots of concentrate with little forage, causing abnormal wear. Tooth alignment seems to have a lot to do with genetics. We maintain tooth health by removing any mismatched tooth areas that are not ground away by the opposing tooth (figs. 3.13 A–D) in a process known as floating (fig. 3.14).

Uncared for teeth can be a source of discomfort for the rescue horse and a reason









3.13 A-D An abnormal tooth in a young horse that has led to misalignment and abnormal wear (A). The same tooth after being "floated." There is an ulcer on the horse's cheek where the sharp point had been rubbing (B). An abnormal "hook" on a premolar that has resulted from teeth that do not align perfectly (C). An abnormally overgrown premolar in a geriatric horse (D). This horse was unable to chew forage. After correction, his hay consumption improved, but he will need access to concentrated or complete feeds to maintain a healthy weight into his golden years.



3.14 A horse's teeth being floated.

he isn't digesting his food. Unfortunately, there is a limited amount of tooth that can be removed in one float procedure without causing harm. If your veterinarian cannot correct all problems, she may suggest floating the horse again in a few months; otherwise, annual dental examination is recommended (fig. 3.15).

Although the horse's teeth are continually erupting throughout his life, at some point the tooth becomes fully erupted, and the hard grinding enamel wears smooth. These horses are referred to as smoothmouthed, and this was historically considered the kiss of death (fig. 3.16). A smoothmouthed horse succumbs to starvation even when hay is in front of him at all times.



3.15 A broken first molar from a rescued horse. This horse had right-sided nasal discharge because of a sinus infection due to the loss of tooth integrity. Although it had been going on for four years, after the abnormal molar was removed the infection and nasal discharge resolved completely.



3.16 Smooth teeth that are at the end of their wear life. This horse will not be able to grind forage.



3.17 A fresh quid (wad of unchewed forage) from a smooth-mouthed horse.

Horses that chew abnormally may quid. A guid is a bit of semi-chewed forage that the horse does not swallow, but rather, spits out (fig. 3.17). When a horse cannot chew hay and is quidding, he should be given other feed that requires less chewing. Available options include pelleted forages such as alfalfa, timothy, or combinations. Complete senior feed rations often contain beet pulp as the fiber, and are vitamin and mineral fortified in a way that hay or alfalfa pellets aren't. Oils, as discussed above, can be added to increase easily digestible calories. For a horse who cannot chew, pellets and complete feeds should be soaked before feeding.

Some of the most heartbreaking horses are those that choose not to eat the pelleted feeds. The old adage, "You can lead a horse to water, but you can't make him drink" seems to apply here. If the opportunities are provided, but the horse does not maintain his weight at a minimum BCS of 4, euthanasia should be considered. When horses do choose to eat the pelleted feeds, many live well into their thirties and some into their forties—a significant feat with no functional teeth. The Remus Memorial Horse Sanctuary in Britain apparently knows how to keep geriatric horses well fed. They had a mare, Orchid, who lived to be 50, and a gelding, Shayne, who held a world record and lived to 51 (fig. 3.18).

Cost is a factor when maintaining a horse who needs a complete feed ration. It can cost hundreds of dollars per month to feed horses with unusable teeth. These horses may be unaffordable.

CHAPTER 14

Fearless:

Halter Training Adult Horses

READINESS REVIEW

Many horses that have suffered from abuse or neglect are already halter trained. When that is not the case, make sure you have done the following before beginning the tasks set forth in this chapter:

- Understand equine physiology as it applies to training.
- Established a daily routine of food and water as a foundation for trust.
- Have a sturdy, safe enclosure.
- Make sure your horse feels comfortable in his living situation.

Horses that cannot be touched are the most challenging to train. These include wild Mustangs and neglected, untrained domestic horses. You may not have any idea how old an adult equine is—after all, you cannot touch him to examine his teeth. Each horse presents unique challenges. First, I'll discuss what behavior you might expect from a mature horse, and the critical step of initially approaching your horse.

Halter selection and fit is important. When you are able to put a halter on your horse, you can get him moving with pressure-and-release training techniques. Once he accepts direction, teach your horse to stand tied. Tools and techniques in this chapter may take minutes for one horse, and months for another. Each learns at his own pace; keep working with yours until he is confident being handled by humans.

If you feel you aren't making progress or your horse is not responding to your concerted efforts, seek assistance. No horse is at higher risk for suffering or resale than an adult horse that is not halter trained.

HORSE PERSONALITY

As an adult, your horse's personality is already defined. A rescuer should "carefully evaluate the personality of an older horse before committing to him, because he's not likely to change." That is, trained or untrained, some horses are naturally more flighty and fearful compared to other more stoic and thoughtful individuals. Observe an unhandled horse carefully before you bring him home.

Pay attention to his body language. What does he do when you enter his enclosure? A horse who runs to the corner and pins back his ears defensively will be more difficult to train than one who looks at you



14.1 A & B The severely neglected hind feet of a thin stallion who was confiscated for neglect (A), and the same horse, several months after castration, with improved condition (B). An adult horse that looks at a person with curiosity like this is more likely to enjoy interacting with humans once he is halter-trained.



with curiosity. Many older horses have a calm, patient attitude that results in thinking through problems, and adults usually have a longer attention span than youngsters (figs. 14.1 A & B).

Illness and starvation can make a horse seem quiet and kind, but this can change as his health improves. Approaches to horses outlined in this chapter can be used for debilitated horses. When your horse has a BCS of 1, 2, or 3, the techniques here for befriending your horse are appropriate. Use the situation to your advantage and teach him to accept the halter right away.

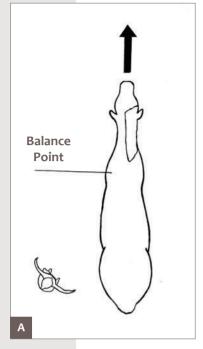
THE FLIGHT ZONE

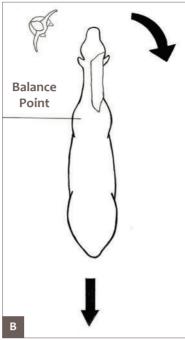
The flight zone is a lot like a personal space "bubble." Its size varies with each individual: A wild Mustang may run when a human is 50 yards away, and a domestic horse may

be willing to let a human be within inches. Whatever the distance the animal's comfort level is, when a human or predator enters his flight zone, he will flee. His movement will be influenced both by fear and by body language.

Using the flight zone, you can move your horse, even though he is not halter trained. There are three basic movements:

- 1. When you move toward the horse's hip, he will move forward (fig. 14.2 A).
- 2. Movement toward the front of the horse (in front of the shoulders) causes him to either back up or turn away from you (fig. 14.2 B).
- **3.** The *balance point* is near the horse's shoulder or withers. Stepping toward the balance point is your best chance for touching your horse.





When you acquire an untouched horse, the flight zone will be used to quietly herd or move a horse across his pen and into a trailer for shipping. The goal is to not chase or excite him, but rather to allow him to investigate and enter the new enclosure or trailer as willingly as possible. Remember, when his fear response is turned on, it will be much harder to disassociate fear from the task of trailer loading later. Plan ahead so you have plenty of time because getting a previously untouched horse into a trailer may take hours. 161

Enclosure Guidelines

Halter training will coincide with quarantine, so your horse's pen should be relatively small and made of sturdy material.

For Mustangs, Bureau of Land Management (BLM) requirements are that fencing for horses 18 months and older is between 20 by 20 feet and 50 by 50 feet in size. The

14.2 A & B Two diagrams showing the movement of a horse using his flight zone and body language. The balance point is the line of the shoulder or withers. Your movement toward the horse's hip will drive him forward (A). Your movement toward him, but in front of his shoulder will cause him to either back or turn away (B).

horse needs enough room to move around, but too large an enclosure will make the gentling process more difficult. Fences and gates must be at least 6 feet high, but 5 feet is acceptable if horses are already gentled, younger than 18 months, or if you are working with a burro. Finally, the material the fence is made of cannot be strands of wire: Two-by-six boards, pipes, or heavy-

gauge woven mesh is acceptable. Barbed wire, electric wires, and high-tensile wire are not acceptable. 162

These are good guidelines for any untouched horse. If your horse is debilitated or sick, he is unlikely to challenge a fence, but if he is healthy and vigorous, he might.

REDUCE FLIGHT ZONE

Before you are ready to touch your horse, he must accept your presence. Neglected domestic horses are generally more used to the idea of a human being nearby. However, Mustangs may remain extremely fearful for long periods. Matter-of-factly going into your horse's pen or stall with feed and water can allow your new horse to get used to your presence and movements.

Enter your horse's pen, and get as close as possible to his flight zone, but retreat before he moves his feet. Figure out how close you can get before your horse moves,

and work to reduce his flight-zone distance. Move deliberately and pay attention. His body will tell you when you have reached the point at which he is no longer comfortable with your presence. Some trainers say that the horse will fidget. Watch for him to move or swish his tail. Look for his weight to shift from one leg to another or for him to lean away from you. As you watch your horse, watch his eyes. If they are wide or he is trembling, he is fearful. A fearful horse will run away from you. When you corner a fearful horse, he is likely to defend himself and injure you. The first order of business is to convince your horse that you are a friend and that he has no reason to be afraid of you. Simply feeding the horse in his pen may be the beginning of the process, but you must work hard to get beyond that step.

Don't hide or sneak up on the horse; move in full view with purpose. If he moves away, don't chase him, but instead wait until he settles (stops moving) and try again. Get as close as you can, and stop your approach before he moves his feet. If you can get within arm's reach, you are in really good shape. If you cannot, keep working to get closer every day. It may take weeks to get within arms' reach, but it is feasible with patience and attention to the horse's body language. Work to get close while he is eating. He has positive reinforcement, and he has a reason to stand and allow you to approach.

Round Pen

An alternative approach to the befriending technique just described is to work with the horse in a round pen until you have communicated to him that you want him near you. There are dozens of trainers who have

extensive presentations on round-penning techniques, so I will not cover this topic further.

If your horse has any medical problems, round-penning is not appropriate. Because round-penning a horse requires him to be able to trot or canter for extended periods of time, many rescue horses are not fit or healthy enough for these techniques. Medical problems that preclude round-pen use include lameness, respiratory or breathing problems, generalized weakness or lack of muscle, or any other problem that would prevent athletic activity. A horse should have a BCS of 4 or more before he is worked in a round pen.

INITIATE TOUCH

The best place to start touching a horse is on his withers. It is a neutral body location, and a point at which horses mutually groom each other (fig. 14.3). Rubbing or scratching that area is pleasant for the horse, and he should be taught that your touch is pleasant. Rubbing or scratching your horse's withers and neck is primary positive reinforcement.

From the withers, maintain touch along his neck, shoulder, and eventually to his cheek and head. Try to touch him under the chin and over all the areas on his head where the halter will touch.

Some horses will show interest in you as you feed them. You may be able to bribe your horse to take grain out of a bucket you are holding and initiate touch while he is eating. You may be able to coax him to take food out of your hand. Any contact is progress. However, you will have to push his boundaries to make it past this step. Keep



touch involves time, energy, patience, and effort from you as the trainer. Offer treats, petting, and verbal praise often. Do your best to keep your even-keel approach and don't lose your temper in frustration. If you become angry and incite a panic response from the horse, getting him halter trained will be that much tougher. Quick movements will scare him, so stay calm and deliberate.

HALTERING AND HALTER TYPES

There are several types of halters including flat leather, flat nylon, rope halters, and combinations thereof. Each has a purpose.

14.3 Horses like to groom each other on their withers and neck. This is the area where they enjoy being petted or scratched, and it lines up with the "balance point" of their flight zone, so it is usually the best place to begin touching a horse.

working until you can easily walk up and touch him.

A few horses will panic when they are touched. Some trainers use an extension of their arm to help horses learn that human touch "does not equal death." The extension may be a pole made of lightweight, flexible material, such as bamboo or PVC. For a difficult horse, you will need to work within a confined safe area (for example, a solid-sided pen) to reach out and touch his withers with your extension.

Working to teach your horse to accept

Flat Halters

Flat halters are constructed of either nylon or leather. One that breaks in an emergency is the safest choice. Breakaway halters are nylon halters designed with a thin leather piece that breaks when strained, keeping the horse safe should an accident occur. He will be released instead of remaining tied or hanging by his neck. Most all-leather halters will also break, whereas flat nylon and rope halters are less likely to break.

Flat halters are comfortable for the horse. One of the reasons they are comfortable is because the point of pressure is spread over the width of the halter. To understand this concept, think about pushing a point of a pencil into your hand compared to the feel of the flat eraser. The flat halter has a more blunted feeling, much like the eraser end.

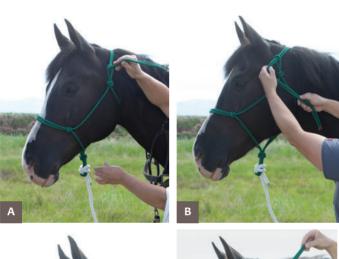
Rope Halters

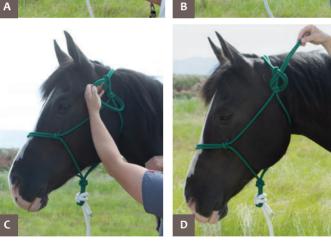
The rope halter is more like the point of a pencil. It is thinner and transmits pressure to only a small area, so rope halters are more effective at relaying subtle cues than flat halters are. Many horses are more respectful of their handlers when a rope halter is used. Rope halters are handy in certain situations because they don't break under pressure.

For example, when you are tying your horse to a highline in the backcountry, you might want to ensure that he doesn't get loose.

A rope halter has a crown piece that goes over the horse's poll from right to left and then ties to a loop on the right cheek piece. When putting a halter on the horse, tie the knot of a rope halter properly (figs. 14.4 A–D). The knot should be tied over the

loop on the cheek piece (fig. 14.5). When tied incorrectly, the result is an unstable knot that can loosen, allowing the halter to slip to an incorrect fit (fig. 14.6). It can also tighten if the horse pulls hard, rendering it impossible to untie. When tied correctly, the pull is transmitted from the cheek piece loop to the crown piece of the rope





14.4 A-D Tying a rope halter properly: First the poll piece goes though the loop (A). Then a "reverse D" shape is made (B). The poll piece goes around the back of the cheek piece loop (C) and through the "D" shape (D). The knot is made from the poll piece, but is tied over the loop of the cheek piece, not back on itself. A good way to remember this sequence (courtesy of Janice Cartwright at Montana Horse Sense) is the crown piece should go "through to you, toward the eye, then around and through to the sky."



14.5 Here you can see a correctly tied knot on a rope halter.



14.6 A rope halter tied incorrectly.

halter. Therefore, it is always possible to undo a correctly tied knot, even if the horse has pulled on the halter very hard.¹⁶³

It is supremely unsafe for a horse to wear a rope halter while he is loose in his paddock or pasture. The rope halter is more likely to catch on things because it has a loop under the chin where the lead rope attaches. Many rope halters have the lead rope incorporated in a permanent manner, so obviously it is not a good idea for the horse to be dragging a long rope around. A long rope is more likely to catch in a fence or entangle the horse's legs.

Halter Fit

Whichever halter you choose, select one that fits well. Halter fit guidelines apply to all types of halters. A loose halter (a gap your fist would easily fit in) is dangerous. A tight halter (you cannot get two fingers between your horse and his halter) is uncomfortable, and a tight halter never allows a release of pressure, so cues you are trying to transmit to the horse are lost.

The halter should lie halfway between the eye and the nostril. Other landmarks to pay attention to are the nasoincisive notch and the facial crest. The nasoincisive notch is the indentation above a horse's nostrils where the soft tissue of the face meets the thin bones of the nose (figs. 14.7 A & B). Pressure on a halter below the nasoincisive notch can result in fractures to the fine nasal bones.

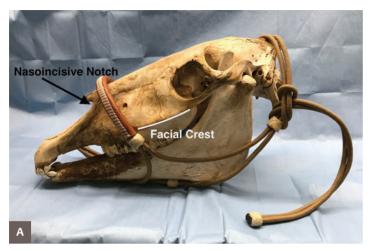
The facial crest is the bony prominence on either side of the horse's face or cheeks. It is parallel to the front of a horse's face. If the halter rides up above the facial crest, it is too high on your horse's head. At this position, you lose your leverage and your cues lose effectiveness.

APPLYING THE HALTER

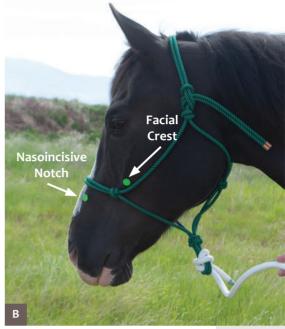
Once your horse's fear is decreased and he will accept touch, allow him to see the halter. He should get used to how it looks in your hands. Allow him to sniff and investigate the halter at his own pace by leaving it in his pen. Looking at the halter without a human present will help convince him that the halter is not a threat.

When he is comfortable with you touching his withers, his face, his chin, and his neck, and he is used to seeing the halter, start using the halter to pet him. You may be able to place it on his back and slowly move it forward, eventually working to his neck and his poll.

Sometimes people place the halter over



14.7 A & B Here you can see correct fit of a halter on the horse's skull. The halter should not rest over the facial crest nor below the nasoincisive notch (A). The halter rests halfway between the eye and the nostril. Green dots are placed on the end of the facial crest and over the nasoincisive notch (B).



the bucket of feed, and when he eats will use the halter to move his head and eventually work to fasten the halter on him. Even if the halter isn't attached, it can be used to move the head out of the bucket, introducing him to the concept of giving to the pressure of the halter. If you are adopting a Mustang, BLM will apply a halter if you provide one.

Once the halter is on, many people leave it on the horse for days to weeks. If you choose to do this, it is best to have a flat halter with a breakaway function. This allows him to get used to the feel of it on his face and touching him. It also allows you to continue to work until your horse is comfortable with being caught and haltered. You may also leave a short "catch rope" on the halter. Leaving halters on calm, trained adult horses is not ideal. In this instance, we are bending the rules to get this horse some help, and to make sure we can continue

to work with him in his small, safe, obstacle-free pen.

While the horse is already wearing a halter and you have some measure of control, work to approach him and put another halter and lead rope on. The second one can be put right over the top of the first. This allows you to practice the process of catching and haltering him, while maintaining control. In this way, you avoid inadvertently having him learn to get away or having to go back and start the halter process all over. Reward the horse with petting or a treat each time you put a halter on.

Try to end each session with some success. This doesn't mean that you are going to march out to the pen and spend all day until your horse is halter trained that evening. It just doesn't work that way. It does mean that if you don't get the halter on today, you are closer than you were yesterday. Maybe today you could touch him with