Briefly review the objectives, content and activities of this session.

Upon successfully completing this session the participant will be able to:

- Explain a brief history of the Narcotic Analgesic category of drugs.
- Identify common drug names and terms associated with this category.
- Identify common methods of administration for this category.
- Describe the symptoms, observable signs and other effects associated with this category.
- Describe typical time parameters, i.e. onset and duration of effects, associated with this category.
- List the clues that are likely to emerge when the drug influence evaluation is conducted for a person under the influence of this category of drugs.
- Describe the procedures for examining and determining the ages of injection sites.
- Correctly answer the “topics for study” questions at the end of this session.

CONTENT SEGMENTS ..................................................................................... LEARNING ACTIVITIES

A. Overview of the Category ............................................................. Instructor-Led Presentations
B. Possible Effects ........................................ Review of Drug Evaluation; Classification Exemplars
C. Onset and Duration................................................................. Reading Assignments
D. Overdose Signs and Symptoms................................................. Video Presentations
E. Expected Results of the Evaluation................................................. Slide Presentations
F. Injection Site Examination
G. Expected Location of Injection Marks
H. Conclusion
I. Classification Exemplar
A. Overview of the Category

Narcotic Analgesics

Point out that this category sometimes is called “The Opioids”; the drugs it contains either are found in Opium, derived chemically from Opium, or produce effects similar to those of the Opium Derivatives.

The term “Opioid,” however, most correctly refers to the synthetic subcategory of Narcotic Analgesics.

Narcotic Analgesic Defined

A medical term, not a legal or police term.

An “Analgesic” is a medication or drug that relieves pain. It differs from an anesthetic, in that it lowers one’s perception or sensations of pain, rather than stopping nerve transmission.

Non-Narcotic Analgesics, such as Aspirin, Tylenol, and Motrin, relieve pain, but do NOT produce narcosis, which means numbness or sedation.

Clarification: non-Narcotic Analgesics relieve pain, but do not alter mood. Therefore, they, in small amounts, are not psychoactive and are not abused for their mind or mood altering actions.

A Narcotic is a drug derived from Opium, or produced synthetically that relieves pain, but also induces euphoria, alters mood, and produces sedation.
Types of Narcotic Analgesics

- Opiates
  - Natural alkaloids
  - Opium derivatives
- Synthetics

There are two subcategories of Narcotic Analgesics:

- Opiates
- Synthetics

Opiates: drugs that either contain or are derived from Opium.

Natural alkaloids of Opium.

*Point out that a “natural alkaloid” is a substance that is found in another substance, and that can be isolated from it. Morphine, for example, is a natural alkaloid of Opium. Codeine is another example of a natural alkaloid.*

The term “main ingredient” can be used as a synonym for “alkaloid.”

*The Natural Alkaloids*

Alkaloids and the Opium derivatives all come from Opium, which is sap from the seed pods of a particular type of poppy.

*The Opium poppy is also called “papaver somniferum” (somniferum in Latin means “carrier of sleep”)*

*An analogy to help participants understand the difference between an alkaloid and a derivative would be to compare opium to wheat. The ‘alkaloid’ of the wheat would be whole wheat flour – a derivative of the wheat would be white flour (wheat flour which has been chemically treated).*

*Opium Derivatives*

Opium derivatives are obtained by chemically treating the Opium alkaloid. Opium derivatives are therefore derived from Opium.

*Synthetics*

Synthetics, which do not derive from Opium at all, have similar or identical effects as Opium alkaloids and derivatives.

*Point out that the synthetic Narcotic Analgesics are produced from a variety of non-opiate substances. Again, these are sometimes called “Opioids.”*
Narcotic Analgesics all share three characteristics:

- They all relieve pain.  
  Clarification: They produce analgesia.

- They will produce withdrawal signs and symptoms when the user is physically dependent, and drug use is stopped.  
  Clarification: Physical dependence results from “chronic administration.” This means that the drug has been taken at fairly regular intervals for a period of time.

- They will suppress the withdrawal signs and symptoms of chronic Narcotic Analgesic administration.  
  Clarification: This means that the various Narcotic Analgesics can be substituted for each other to relieve withdrawal symptoms.

Morphine is typically used as the standard for comparison with other Narcotic Analgesics.
**Some Commonly Abused Opiates**

**Powdered Opium**
Powdered Opium (also known as smoking Opium).
A simple refinement of raw Opium.
Used medically to treat diarrhea (administered orally).
The development of more effective opiates and synthetics has virtually eliminated its use medically. In recent years, there has been little street use of Opium. It is important to realize, however, that drug use trends can and do change.

Remains popular as a drug of abuse (smoked) among some Asian-American communities.

**Morphine**
*For your information: named after Morpheus, the Greek God of Dreams.*
Morphine, the principal natural alkaloid of Opium.
Morphine was first isolated from Opium in 1805.
Used medically to suppress severe pain (e.g., with terminal cancer patients).
Highly addictive.

Morphine was widely used during the Civil War. Morphine addiction was termed “Soldier’s disease.”

At one time, Morphine was the most commonly abused Narcotic Analgesic.
**Codeine**

Codeine is another natural alkaloid of Opium.

Its technical name is Methylmorphine.

First isolated in 1832.

Codeine’s pain killing ability is much weaker than Morphine’s.

Used medically to suppress coughing or minor pain.

Clarification: Narcotic Analgesic addicts often turn to Codeine when they cannot get more popular drugs.

Codeine is definitely an addictive drug.

---

**Heroin**

Heroin is the most commonly abused illicit Narcotic Analgesic.

*Point out that the generic, or technical name for heroin is “Diacetyl Morphine.”*

*Write “Diacetyl Morphine” on the dry erase board or flip-chart.*

Derived from Morphine in 1874.

Heroin was first thought to be a non-addictive substitute for Morphine.

It was approved for general use by the American Medical Association in 1906.

By the 1920’s it was evident that Heroin was much more addictive than Morphine.

Importation and manufacture of Heroin have been illegal in this country since 1925.

Heroin is a Schedule I drug, which means it has no legitimate medical uses in the United States.

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**Dilaudid**

Dilaudid is another derivative from Morphine.

Technical Name: Hydromorphone Hydrochloride.

First produced in 1923.

Sometimes called “drug store Heroin,” since it is commercially available from medical and pharmaceutical sources.

Dilaudid has the same addictive liabilities as does Heroin or Morphine.

Used medically for short term relief of moderate to severe pain, and to suppress severe, persistent coughs.
Can be ingested via injection, orally or in suppositories. Sometimes abused by addicts who are unable to obtain Morphine or Heroin.

Hydrocodone

Hydrocodone is derived from Codeine but is more closely related to Morphine in its pharmacological profile.

Point out that Hydrocodone products are frequently-prescribed pharmaceutical opiates (Narcotic Analgesic).

Examples include:

- Hycodan
- Vicodin (Vicodin is a commonly prescribed pain reliever containing Hydrocodone and Acetaminophen.)
- Lortab

Thebaine

An opiate alkaloid derived from opium. Not used therapeutically.

Converted into several drugs including oxycodone and oxymorphone.

Numorphane

Technical Name: Oxymorphone.

Used medically for the relief of chronic pain.

Sold in ampules (injection) and in suppositories.

Previously (pre-1972) it was sold in tablets, and was a favorite substitute for Heroin among addicts; addicts now generally prefer Dilaudid as a Heroin substitute.

A derivative of Thebaine (source: “Disposition of Toxic Drugs and Chemicals in Man” 9th edition, R. Baselt)

Oxycodone

Oxycodone is a semi-synthetic narcotic produced by chemically treating Thebaine. It is somewhat less addictive than Morphine, but more than Codeine.

Two examples are:

Brand Name: OxyContin.
Percodan is one of the most commonly prescribed Narcotic Analgesics.

It is also produced under the brand name of “Percocet”, which is Percodan combined with Acetaminophen, such as Tylenol.

OxyContin is a controlled release tablet that contains large amounts of Oxycodone (10-160mg). Abusers learn to circumvent the slow release mechanism.

Street names: “Oxy”; “OC”; “Killer.”

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**Buprenorphine**

Buprenorphine is a Thebaine derivative with powerful analgesia. As an analgesic it is about 25 to 40 times more potent than morphine (Source: “Disposition of Toxic Drugs and Chemicals in Man” 9th Edition, R. Baselt.)

It is an ingredient of the drug Suboxone.

Depending on the application form, buprenorphine is normally prescribed for the treatment of moderate to severe chronic pain (pain that has outlived its use to prevent injury and after three months. It is commonly used in the treatment of opioid addiction, much like methadone.

Buprenorphine hydrochloride is normally administered by intramuscular injection, intravenous infusion, via a transdermal patch, or as a sublingual (under the tongue) tablet. It is also used in the treatment of narcotic addiction
Some Common Synthetic Opiates

Demerol

Demerol was first produced in 1939.

Technical Name: Meperidine.

Demerol is one of the most widely used Synthetic Opiates for relief of pain and for sedation. It is also one of the Narcotic Analgesics that is most frequently abused by medical personnel. Demerol is widely used as an analgesic in childbirth.

One medical advantage of Demerol is that it produces less respiratory depression than do other Narcotic Analgesics; thus, a fatal overdose is less likely with Demerol. Medical literature sometimes indicates that Demerol does not cause pupillary constriction. Enforcement experience indicates to the contrary.

Point out that pupillary constriction ordinarily is one of the most reliable indicators of a Narcotic Analgesic.
**Methadone**

Methadone was developed in Germany during World War II and first marketed in America in 1947.

Methadone was developed in Germany because of wartime shortages of Morphine.

Methadone’s effects are similar to Morphine’s, although they develop more slowly and last longer than do Morphine’s effects.

Methadone’s withdrawal symptoms are slower and milder than are Morphine’s.

*Ask participants: “What is one of the most common medical uses of Methadone in this country?”*

Used extensively in “maintenance programs” as a substitute for Heroin for addicts undergoing therapy and treatment.

*Remind participants that one characteristic shared by all Narcotic Analgesics is that they suppress withdrawal symptoms of chronic Morphine administration.*

In theory, the daily dose of Methadone given to a Heroin addict allows the addict to function normally with no physical need for up to 24 hours. Methadone has a much longer duration of effects than Heroin and is not designed to be injected.

Methadone is also used medically to relieve moderate to severe pain, and to suppress coughing.
Fentanyl
A synthetic Narcotic Analgesic of high potency and short duration of action.

“Sublimaze” is one of numerous brand names for Fentanyl. It is a Schedule II drug. It is frequently found in overdose situations. For example, “Tango and Cash” and “Goodfellas,” which contained Fentanyl, were sold in New York City in 1990 as Heroin.

Many fatal overdoses occurred as a result.

First developed in 1963 as an intravenous anesthetic.

Legally produced as a pain killer and available in an injectable solution or transdermal patches.

The principal abused analog of Fentanyl is “3-methylfentanyl.”
Methods of Administration
Methods of administration of Narcotic Analgesics vary from one drug to another.
Some are commonly taken orally.
Some are smoked.
Some are snorted (taken intranasally).
Users have stated that the fear of contracting diseases, such as AIDS, from shared needles, has prompted them to either snort or smoke Heroin.

*If available, show Heroin injection paraphernalia.*
Some are often administered in suppositories. Medically, some Narcotic Analgesics may be administered transdermally or through the skin.
Fentanyl patches are often used for chronic pain.
Heroin and some others are usually taken by injection.

*Solicit participants’ comments and questions concerning this overview of Narcotic Analgesics.*
B. Possible Effects

As with nearly all drugs of abuse, the effects produced by Heroin or other Narcotic Analgesics depend on the tolerance that the user has developed for the drug.

People develop tolerance for Narcotic Analgesics fairly rapidly.

“Tolerance” means that the same dose of the drug will produce diminishing effects or conversely that a steadily larger dose is needed to produce the same effects.

A Narcotic Analgesic user who has developed tolerance and who is using his or her “normal” dose of the drug may exhibit little or no evidence of intellectual or physical impairment.

*Emphasize: Habitual users of drugs may develop tolerance to the drug. As a result, they may exhibit relatively little evidence of impairment on the psychophysical tests. Even tolerant drug users, when impaired, usually exhibit clinical evidence (i.e. in the vital signs and eye signs).*

Impairment is more evident with new users, and with tolerant users who exceed their “normal” doses.

*Clarification: the tolerant addict who has injected his or her “normal dose” of Heroin may appear to be much less impaired than an inexperienced user who had taken the same dose.*
Observable Effects

Observable effects of Heroin and other Narcotic Analgesics.

Sedation – “On the Nod.”

The condition known as “on the nod” is a semiconscious state of deep relaxation.

Point out that “on the nod” occurs most often with new users or with users exceeding normal doses.

The user’s eyelids become very droopy.

Remind participants that the technical term for “droopy eyelids” is Ptosis.

Their head will slump forward until the chin rests on the chest.

In this condition, the user usually can be aroused easily and will be sufficiently alert to respond to questions.

Point out that this condition is different from someone under the influence of a CNS Depressant at the point of passing out or someone “crashing” after high doses of CNS Stimulants.
Other Effects

These effects may be dose-related, and most often occur with non-tolerant users.

- slowed reflexes
- slow and raspy speech
- slow, deliberate movements
- inability to concentrate
- slowed breathing
- skin cool to the touch
- possible vomiting
- itching of the face, arms or body

For your information: Technical terms are Hypopnea or Bradypnea.

- skin cool to the touch
- nausea
- itching of the face, arms or body

Solicit participants’ comments and questions concerning possible effects of Narcotic Analgesics.
C. Onset and Duration of Effects

*Psychological Effects*

The psychological effects of Heroin begin immediately after the injection.

- A feeling of pleasure or euphoria.

*Point out that the intensity of the euphoria will depend on a number of factors, one of which is the addict’s tolerance. A heavily addicted user who is beginning withdrawal symptoms may experience only mild euphoria.*

- Relief from the symptoms of withdrawal.
- Relief from pain.
Onset and Duration of Effects

5-30 minutes: Onset of physical effects
- “On the nod”
- Poor motor coordination
- Depressed reflexes
- Slowed breathing

17-23

Physical effects usually are observable for up to 4-6 hours

Observable Signs

The observable signs will usually become evident within 5 – 30 minutes after the user has injected.

- User may nod head and move in and out of consciences
- User may display poor motor coordination, depressed reflexes, and slowed breathing

Remind participants that the physical effects may not be observed at all, if the addict is tolerant and has injected a “normal” or “maintenance” dose.

The effects will usually be observable for up to 4 – 6 hours.

As the drug wears off, withdrawal signs and symptoms start to develop until the addict user injects again.

Point out that the development of withdrawal symptoms implies that the Narcotic Analgesic has worn off.
As the effects of Heroin diminish, withdrawal symptoms begin.

- Aches
- Chills
- Insomnia
- Nausea

As with nearly all drugs, the withdrawal signs and symptoms are essentially the opposite of the “high” or intoxicated state.

Withdrawal signs start to become observable 8 – 12 hours following injection.

- Goose bumps (piloerection) on the skin
- Sweating
- Runny nose
- Tearing
- Vomiting
- Yawning

*Point out that yawning, tearing, runny nose and vomiting usually appear only after marked withdrawal of many hours.*

Withdrawal signs and symptoms closely resemble those of Influenza or the common cold.
These symptoms begin to intensify from 14 – 24 hours after injection, and may be accompanied by goose bumps (piloerection), slight tremors, loss of appetite and dilation of the pupils.

**Point out that “withdrawal” signs of Narcotic Analgesics are essentially the opposite of their “under the influence” signs.**

Approximately 24 - 36 hours after injection, the addicted user experiences insomnia, vomiting, diarrhea, weakness, depression and hot and cold flashes.
Withdrawal symptoms and signs generally reach their peak 2 – 3 days after injection:

- Muscular and abdominal cramps
- Severe tremors and twitching
- Elevated temperature
- Sharp loss of weight

Point out that the involuntary tremors and twitching of the legs give rise to the expression “kicking the habit.”

The addicted user at this point is nauseated, gags, vomits and may lose 10 – 15 pounds within 24 hours.

The withdrawal syndrome continues to decrease in intensity over time, and is usually greatly reduced by the fifth day, disappearing in one week to 10 days.

A common misconception regarding withdrawal from Narcotic Analgesics is that they may be fatal. In reality, however, although Narcotic withdrawal is extremely uncomfortable, it rarely, if ever proves fatal.

Solicit participants’ comments or questions concerning onset and duration of the effects of Narcotic Analgesics.
D. Overdose Signs and Symptoms

Narcotic Analgesics depress respiration.

In overdoses, the user’s breathing will become slow and shallow.

Death can occur from severe respiratory depression.

The danger of death is heightened by the fact that the addicted user may not know the strength of the drug he or she is taking.

Clarification: the percentage of pure Heroin in the sample the addict uses may be much higher than what the addict expects and is used to.

Other signs and symptoms of an overdose of a Narcotic Analgesic include clammy skin, convulsions and coma, blue lips and pale or blue body, extremely constricted pupils (unless there is brain damage, in which pupils may be dilated), recent needle marks, or perhaps a needle still in the user’s arm.

*Point out that a person suffering from Narcotic Analgesic overdose may appear to be in shock.*

Narcotic Analgesic overdoses are sometimes treated by the administration of a Narcotic antagonist such as Narcan. A Narcotic antagonist works at neuron receptor sites, blocking or counteracting the effects of Narcotic Analgesics. In effect, these substances precipitate withdrawal. The short duration of effects produced by Narcotic antagonists, however, require continued medical monitoring of the user.

*Solicit participants’ comments and questions concerning signs and symptoms of an overdose of Narcotic Analgesics.*
E. Expected Results of the Evaluation

Observable Evidence of Impairment

Neither Horizontal Gaze Nystagmus nor Vertical Gaze Nystagmus will be present. Eyes will not exhibit Lack of Convergence.

Psychophysical Tests

Performance on the Modified Romberg Balance Test will be impaired. Generally, the subject will appear drowsy, and will have a slow internal clock.

Point out that, if the user has ingested enough Narcotic Analgesic to exceed his or her level of tolerance, his or her performance on the Standardized Field Sobriety Tests will be uncoordinated and “rubber-legged,” similar to that caused by CNS Depressants.

Performance on the Walk and Turn and One Leg Stand will be impaired, and will reflect the slow and deliberate movements caused by this category of drugs.

Performance on Finger to Nose will also be impaired. Generally, the subject will appear drowsy, possibly “on the nod,” and exhibit slow and deliberate movements.
Vital Signs

Pulse will be down.

Blood pressure will be down.

Body temperature will be down.

Remind participants that these cardiovascular indicators may not be present if the subject is a tolerant user who has taken a “normal” dose of the drug.

Muscle tone will be flaccid.

Dark Room

Pupil size generally will be constricted (below 3.0 mm in diameter).

Point out that constricted pupils are one of the most reliable indicators of a Narcotic Analgesic. The technical term for “constricted pupils” is “Miosis.”

Pupil reaction to light will be little or none visible.
**General Indicators**

- Constricted pupils (Miosis)
- Depressed reflexes
- Droopy eyelids (Ptosis)
- Drowsiness
- Dry mouth
- Euphoria
- Facial itching

*Itching – caused by the release of Histamines*

- Nausea
- “On the nod”
- Puncture marks

*If available, show slide of typical addicts “track” marks.*

- Slowed reflexes
- Slow, low, raspy speech
- Slowed breathing
### Narcotic Analgesic Symptomatology Chart

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>HGN</td>
<td>None</td>
</tr>
<tr>
<td>VGN</td>
<td>None</td>
</tr>
<tr>
<td>Lack of Convergence</td>
<td>None</td>
</tr>
<tr>
<td>Pupil Size</td>
<td>Constricted</td>
</tr>
<tr>
<td>Reaction to Light</td>
<td>Little or None Visible</td>
</tr>
<tr>
<td>Pulse Rate</td>
<td>Down</td>
</tr>
<tr>
<td>Blood Pressure</td>
<td>Down</td>
</tr>
<tr>
<td>Temperature</td>
<td>Down</td>
</tr>
<tr>
<td>Muscle Tone</td>
<td>Flaccid</td>
</tr>
</tbody>
</table>

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Symptomatology Chart
F. **Injection Site Examination**

Examination of subject’s injection sites can give many clues to their drug habits.

- The slang term for an injection site is a “mark.”
- Many drugs can be injected.
- The presence of injection sites doesn’t ensure the subject is under the influence of drugs. Examination of injection sites is just one of the twelve steps in the evaluation.
- Injection sites are a sign of drug abuse which may or may not be present.
- May be evidence of habitual use.
- The trauma to the skin, muscles and the blood is the basic concept of injection sites.
Drugs and medication are injected into the body in three ways:

**Intramuscular**

Legal injections are usually Intramuscular.
- Abbreviated as I/M
- “Intramuscular” is defined as administering by entering a muscle.

**Intravenous**

- For medically drawing of blood or emergency medical procedures, the injection is made into a blood vessel (Intravenous). Veins are usually used. Arteries are deep, thus not lending themselves to injection.
- Abbreviated as I/V
- “Intravenous” defined as entering a vein.

**Subcutaneous**

- Subcutaneous means just under the skin.
- Commonly referred to as “skin popping.”

*Let the participants know that insulin injections are “Subcutaneous” (S/C) and are not normally I/M or I/V injections. Insulin is never injected into a blood vessel, because the person could go into a coma.*
The primary instrument for injection is the hypodermic syringe.

- It consists of a hollow needle, a Barrel (tube) and a plunger.
- Needles vary in size, with the primary variance being the inside diameter of the needle or the gauge.
- A 26 gauge needle is used by a diabetic.
- The greater the number the larger the gauge, the smaller the inside diameter of the needle.
- Most illegal drug users prefer a larger gauge needle.
- The hypodermic marks are smaller and are therefore, less noticeable making it more difficult for the DRE to see them.
The user’s equipment is commonly referred to as a “hype kit” or “works.”

- The kit contains a “cooker” which is any device such as a bottle cap, a metal spoon, etc., that is used to heat the drug with water to form an injectable solution. Other parts of the “kit” include:
  - A handle to hold the “cooker” over the flames.
  - Matches, lighters (primarily disposable, adjustable flame types) used to heat the substance in the “cooker.”
  - A tourniquet, which can be a rubber tubing, a tie, belt, etc. It is tied around the arm, above the injection site, to cause the vein to bulge or rise, thus making it easier to inject.
  - “Cottons” are the cotton balls or cigarette filters used to “purify” the drug. The user places the “cottons” into their cooker and draws the drug up through the cottons.
  - The cottons are saved for later use since they contain some of the drug.
As a DRE, you may be asked in court to describe the difference between a medical and non-medical injection site.

A medical injection is usually intramuscular

Some exceptions would be in a blood donation, an emergency or a lab test.

There may be multiple injections, if the technician is unable to find a vein during the first try. There may also be bruising near the site.

The injection mark for medical purposes can be described as:

- Clean
- No scarring or scabbing

Most intramuscular medical injections will not be evident during a DRE evaluation.

- Usually there will be only one mark and it will be larger than the typical non-medical injection.
- Medical injections are made with new, sterile needles.
The non-medical (illicit) mark is usually over a vein.

- There will usually be multiple marks in various stages of healing. It takes approximately two weeks for a “mark” to totally heal.
- For example, the Heroin addict will inject approximately four to six times each day (every four to six hours). Therefore, they will inject approximately 2,000 times in one year.
- Users frequently use the same needle over and over again. Thus making it become dull or barbed.
- Frequently the needles are carried in pockets or socks and the rubbing against clothing causes them to be dull or barbed.
- Since the used needles make it more difficult to pierce the skin and vein, the injection sites may be jagged.
- A barbed needle may tear the skin on the way in and on the way out.
- Use of old, dirty and shared needles cause the spread of infections and diseases such as AIDS.

ALWAYS WEAR PROTECTIVE GLOVES PRIOR TO CONDUCTING THE EXAMINATION.
Users may frequently use the same spot to inject, as an attempt to reduce their likelihood of detection.

The veins may become hard and thick from continuous injections and makes them difficult to find. This is an obstruction by a clot of coagulated blood shutting off the passage of blood.

- The technical term is “Thrombosed.”

After about 10 to 20 injections, a large sore forms causing the site to enlarge and bruise. Upon close examination, the site reveals there are numerous puncture wounds in the same area, overlapping each other.

- This is referred to as “tunnel” or “corn.”
**Basic Principles of Puncture Healing**

The healing is greatly retarded.

Any needle that punctures the skin leaves a scab. A scab is simply a crust formed by the drying of the discharge from the puncture.

Scab is the dried remains of blood, plasma (a cellular, colorless fluid part of the blood), lymph fluid (a thin fluid that bathes all the tissues of the body) and puss (a thick yellowish/greenish fluid that forms at an injection(s) site).

These dried remains fill the gap caused by the puncture of the skin. As the fluids dry they harden (clot and gel).

Users will sometimes peel a corner of a healing scab up and inject into that area then cover the injection site with the scab.

This injecting under a scab to hide multiple puncture wounds is referred to as “Trap Doorring.”

**Puncture Healing Timetable**

There are no exact timetables for wounds to heal, but there are some general guidelines.

- Chronic disease, poor nutrition and etc. retard the puncture healing process.
- Scabs develop within about 18 – 24 hours after a puncture.
- A general rule: when the scab first forms, it is bright red. With age, the color gets darker and darker.

After about 14 days a scab usually starts to peel or flake and then falls off. The skin under the scab is shriveled and is lighter in color than the surrounding tissue.
There is no exact science to classifying the age of puncture wounds. Some general guidelines are:

- **Fresh puncture wounds** are defined as under 12 hours after injection and will be a red dot and have an oozing appearance or blood crater with no scab formation.

- **Early puncture wound** is 12 – 96 hours (half day to 4 days) after injection. It will have a light scab, light bruise, reddened border and a crater appearance.

- **Late puncture wound** is 5 – 14 days old and will have a dark scab, dark bruise and the crater will flatten.

- **Healing puncture wound** is over 14 days. The scab will be flaking and falling off with shriveled light colored skin underneath.
Other Indicators of Injection Sites

In an attempt to hide puncture wounds, users may inject into tattoos. Tattoos that are designed to hide puncture wounds are frequently colored and found on the inner arms.

- Tattooing also refers to dark carbon deposits that result from using a flame to “sterilize” a needle. Carbon deposits on the needle are then injected into the skin, causing a tattoo effect.
- A “track” is a hardened part of a vein where numerous injections have been administered. The entire vein becomes scarred and hardened and with time may no longer be able to inject into. The area becomes silvery-blue in color and raised. This is referred to as “silver streaks.”
- AS A GENERAL RULE: one inch of tracks indicates that approximately 50 – 100 separate injections have been administered in this area.
G. Expected Location of Injection Marks

Prior to conducting the injection site examination, always remember to wear gloves.

Injection sites may be located anywhere on the subject’s body.

Conduct a thorough, slow, methodical examination of the subject’s arms beginning with the left.

• Using a magnifying light or “ski light” examine the inner arm as it is extended with the palm facing you.

**Point out that “ski light” is short for schematic light. An ideal light is a 10 power magnification light.**

• Beginning at the bicep, slowly examine the arm. Document the findings of your examination.

• Ask the subject to contract the arm, grasping their shoulder. Starting at the wrist, slowly examine the arm to the elbow documenting the results.

• This forces the individual’s veins to protrude.

• Next examine the outer arm as it is extended palm facing downward. Start the examination at the shoulder moving to the wrist.

• Subject should extend and spread his/her fingers when examining the hands. Examine both sides of the hands, with particular attention to the areas between the fingers, under watch bands and rings.

• Conduct the entire procedure for the right side.
Ankles are a common injection area.

- Subject should be instructed to remove their shoes and socks to allow the DRE to examine them for puncture wounds.
- The most common area is on the foot or the ankle.

Subjects sometimes hide hypodermic needles in their socks, shoes and the heel compartments of their shoes.

On a case by case basis, the DRE may need to examine other parts of the body for marks. Another such area may be the legs.

- **Always follow your Agency’s rules, policies and procedures and laws regarding invasive type searches.**
H. Conclusion

The injection site examination may reveal evidence of recent use.

*Point out that DREs may want to photograph new or recent injection marks for evidential purposes.*

The presence of marks, however, doesn’t mean drug influence or impairment at the time of the evaluation.

Conducting an injection site examination is a skill.

As with all skills, such as taking blood pressure, competency improves with practice.

*Click video to begin*

**VIDEO DEMONSTRATION**

*Show video example of subject under the influence of a Narcotic Analgesic. (Approximately 23 minutes).*
I. Classification Exemplar

Refer students to the exemplars found at the end of Session 17 of their participant manuals.

Point out that the one-page narrative in the example exemplars are not to be construed as the recommended or approved narrative report. The actual narrative report submitted by DREs will be more detailed.

Relate the items on the exemplars to the Narcotic Analgesics Symptomatology Chart.

Relate behavior and observations to the Narcotic Analgesic Symptomatology Chart.

Solicit students’ questions or suggestions concerning Expected Results of the Evaluation of subjects under the influence of Narcotic Analgesics.
Solicit participants’ comments and questions concerning the Narcotic Analgesic and Injection Site Examination.

TOPICS FOR STUDY / ANSWERS

1. What are the two subcategories of Narcotic Analgesics?

   **ANSWER: Natural Opiates and Synthetic Opiates**

2. What three distinguishing characteristics do all Narcotic Analgesics share?

   **ANSWER: They relieve pain, they will produce withdrawal signs and symptoms, and their use will suppress the withdrawal signs and symptoms of chronic morphine administration.**

3. Consider this situation: A heroin addict injects what is, for him, a “normal” dose of the drug. One hour later a DRE examines the addict and finds that he is not impaired. What is the most likely explanation for this?

   **ANSWER: The addict has developed a tolerance and is using his/her “normal” dose of the drug.**

4. What is another, more common, name for the drug called Diacetyl Morphine?

   **ANSWER: Heroin**

5. What is Methadone?

   **ANSWER: A drug used extensively in maintenance programs as a substitute for heroin.**

6. An analgesic is a drug that ______?

   **ANSWER: Relieves pain**

7. What is Oxycodone?

   **ANSWER: A semi-synthetic narcotic prescribed for chronic or long-lasting pain.**