

# Packaging Materials

- Paper bags
- Plastic bags\*
- Pill boxes
- Envelopes and note pad
- Glass jars
- Paint cans
- Cardboard boxes
- Evidence tape
- Specialized materials



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# Packaging Techniques

## Choice of proper container

- Paper is the packaging material of choice
- Plastic should only be used when there is danger of liquids (biohazard or other) penetrating



# Packaging Techniques

## Air-Dried

- Evidence should be allowed to air-dry
- The optimal method to preserve DNA



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DNA

# Packaging Techniques

## Tissue and liquid samples

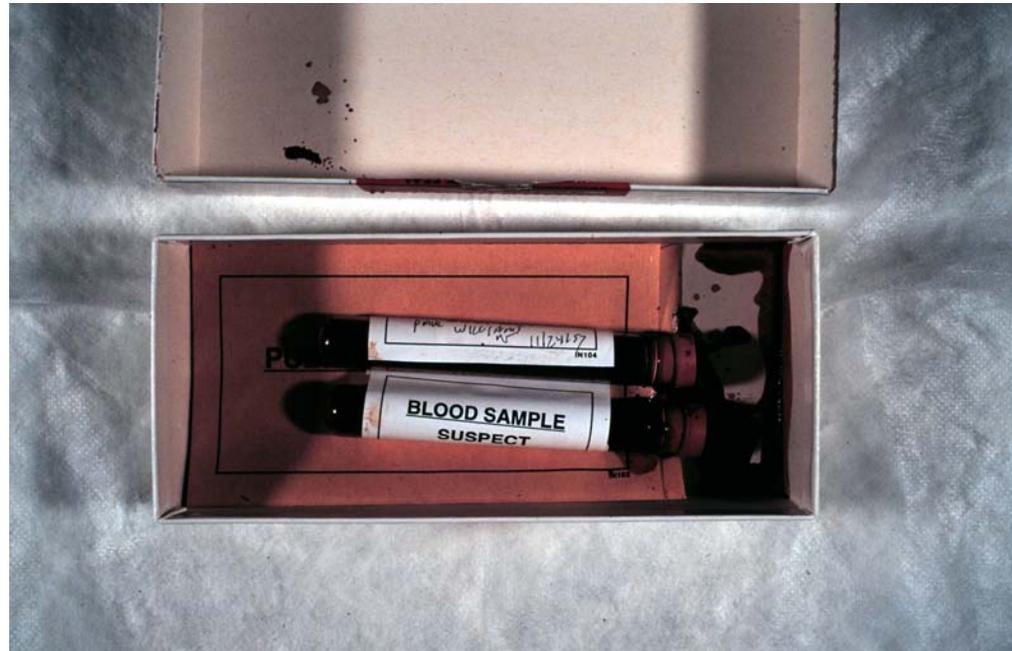
- Keep refrigerated



DNA

# Caution!!

Never freeze liquid tubes of blood



Be careful, put glass tubes in plastic bag

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# Packaging Techniques

- Package items separately when recovered separately
- If items found together, then package together
  - Clothing in a pile
  - Cigarettes in an ashtray



# Packaging Techniques

- Don't allow fluids or stains to touch each other or unaffected areas

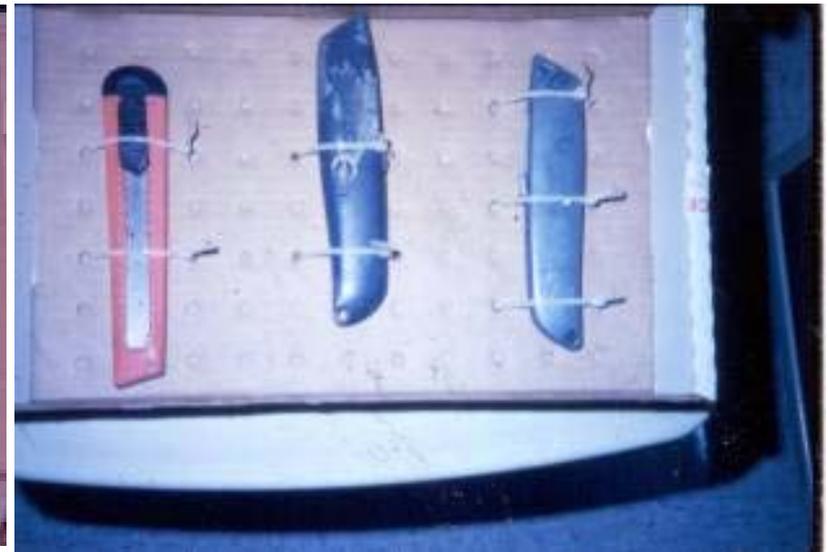


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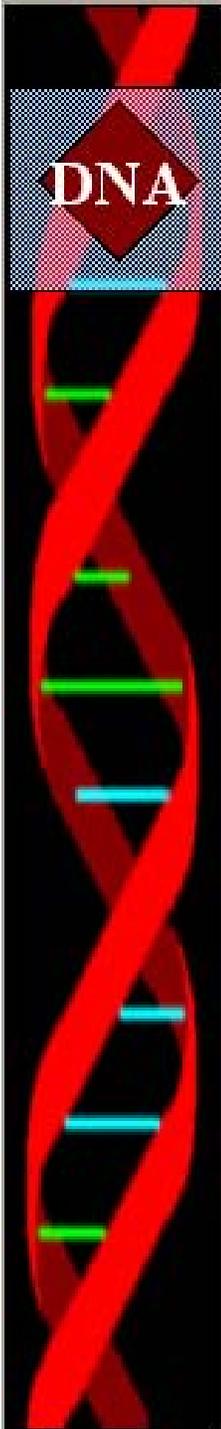
# Packaging Techniques

Minimize interior  
movement



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A vertical graphic on the left side of the slide depicts a DNA double helix. The two strands are colored red and are intertwined. Horizontal rungs connecting the strands are colored in alternating green and cyan. At the top of the graphic, a red diamond shape contains the word "DNA" in white, bold, sans-serif capital letters. The entire graphic is set against a black background.

DNA

# Packaging DNA Evidence

## Acceptable

- Paper
- One item per bag
- Stains air-dried
- Do not overfill bag

## Unacceptable

- Plastic
- Multiple items per bag
- Stains still wet
- “Mummy wrap”

A diamond-shaped logo with a grey stippled background and the word "DNA" in white capital letters.

DNA

# Labeling Packages

- Name/initials of the collector
- Each person/entity subsequently having custody
- Date of collection or transfer
- Agency and case #
- Victim or suspect name
- Brief description of item

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# Labeling Packages

- Label container before packaging



# Labeling Packages

- Label and identify exterior as to content

EVIDENCE C [REDACTED] POLICE DEPT.  
Case # C1003- [REDACTED]  
#26  
MABELA ENVELOPE CONTAINING  
GLASSINE BAG W/ LEAF W/ RED STAINS  
Type Offense 9A/ HOMICIDE  
Date 11-05-03 Time 0542  
Location 206 14TH ST NW  
Victim/Suspect [REDACTED]  
Officer/Det. [REDACTED]  
Evidence Tag # 009688  
DANG  
W/1  
NEXT  
TO  
206 14TH  
NW

**EVIDENCE**  
POLICE DEPT. [REDACTED]

01.23.2004

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# Labeling Packages

- Label the item with warnings/hazards or other helpful information:
  - Biohazard
  - Sharp
  - Fragile
  - Unloaded
  - Etc.

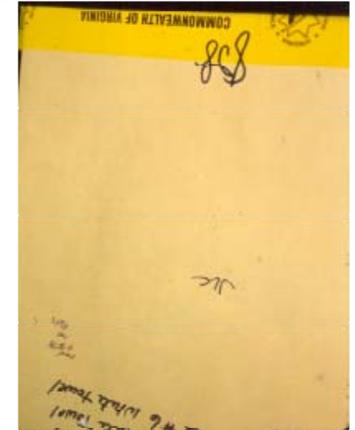


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# Sealing the Package

- Seal packages with tape
  - Prevents items from falling in
  - Prevents items from falling out
  - Provides measure of security – evidence can't be accessed unless seal is broken
- Initial across seal or under the seal



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# Sealing the Package

## Acceptable

- Scotch tape
- Packaging tape

## Unacceptable

- Masking tape
- Staples

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# Identify the Packaging Error

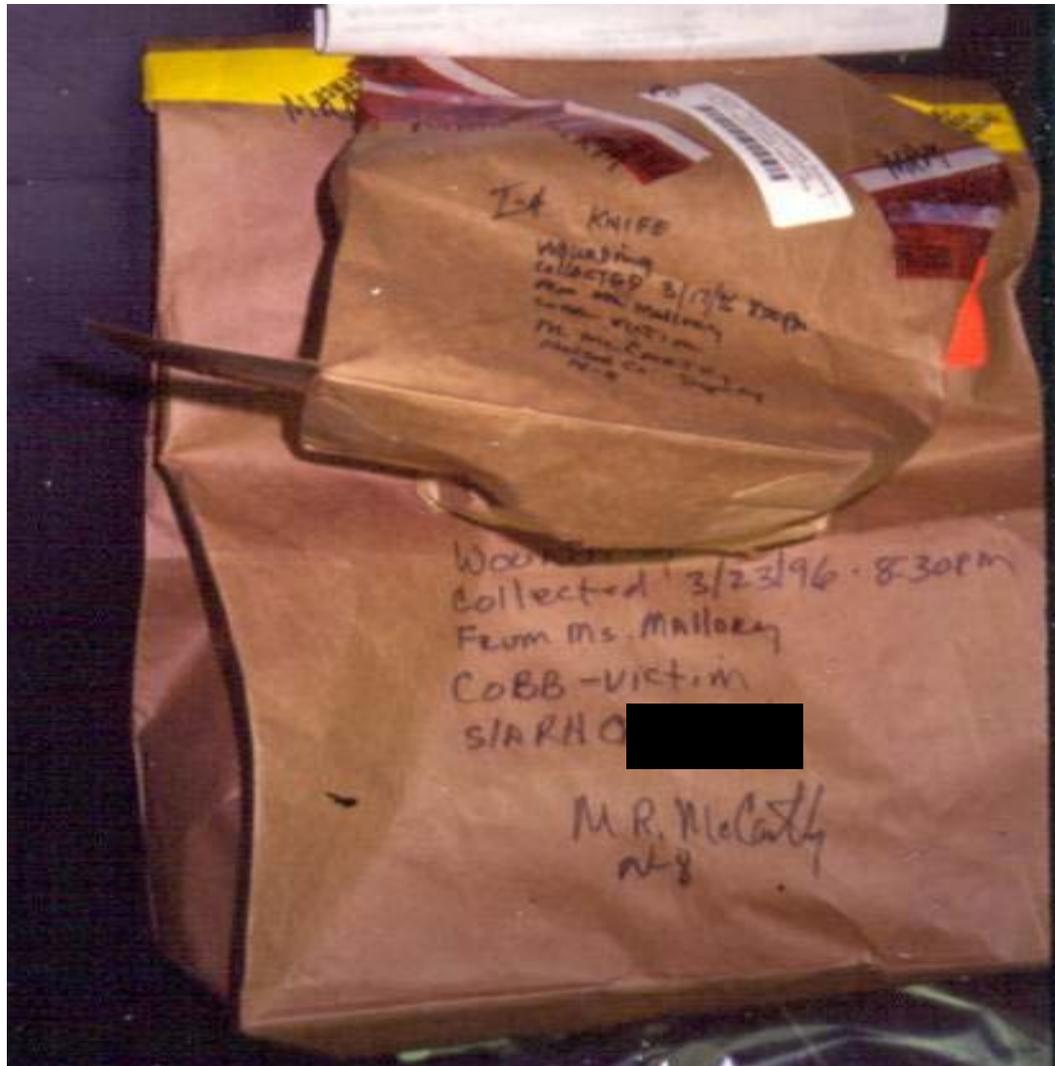


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# Identify the Packaging Error

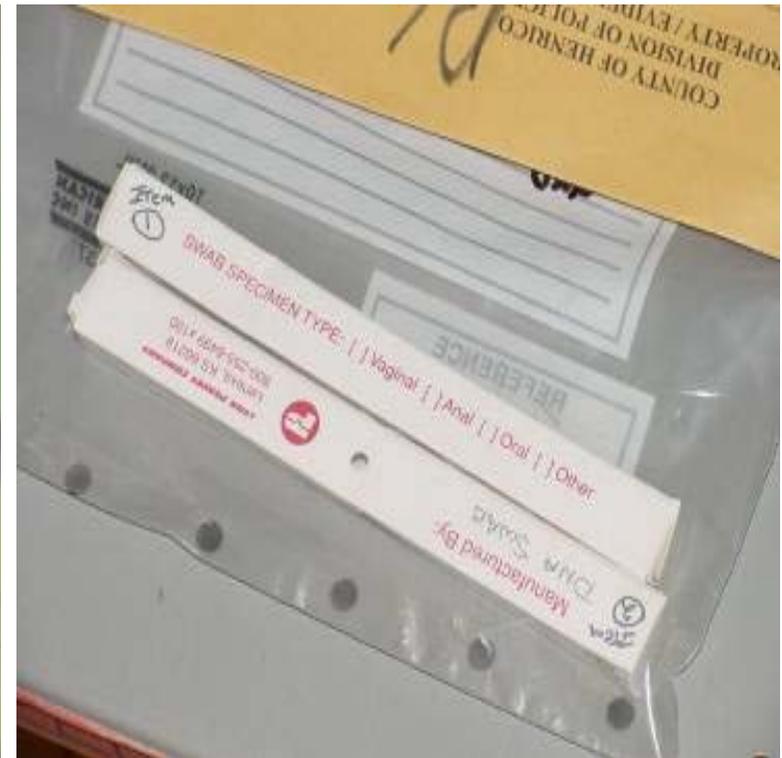


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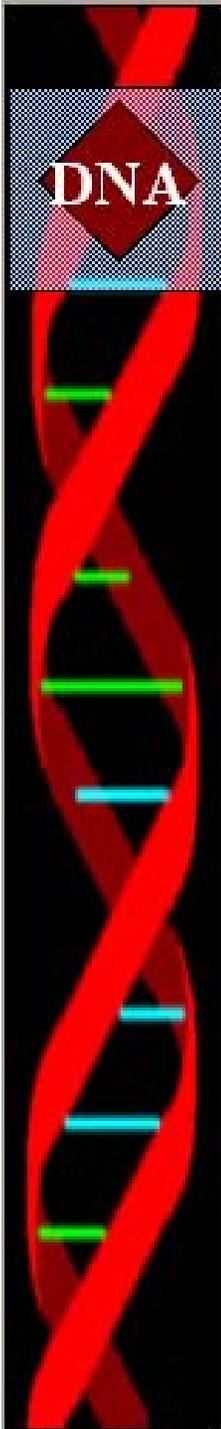
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# Identify the Packaging Error



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DNA

# Preserving DNA Evidence

## Acceptable

- Keep cool
- Bring to lab as soon as possible

## Unacceptable

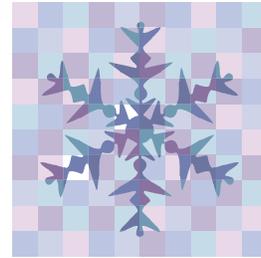
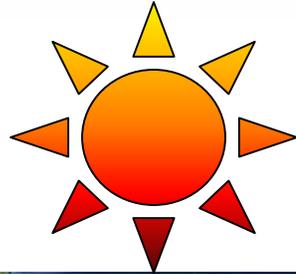
- Keep warm
- Delay in transport to lab

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# Trunk Storage



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A diamond-shaped logo with a grid pattern and the word "DNA" in white capital letters.

# Summary

## DO

- Air dry before packaging
- Use paper
- Use separate bags
- Use plenty of room
- Seal with scotch tape
- Initial with permanent marker
- Keep item cool

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A diamond-shaped logo with a grey stippled background and the word "DNA" in white capital letters.

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# Summary

## DON'T

- Package item still wet
- Use plastic
- Clump in one bag
- Use smallest bag
- Staple shut
- Initial with ballpoint pen
- Keep in trunk in July

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A diamond-shaped logo with a grid pattern and the word "DNA" inside.

# Now What?

- Are you familiar with your lab's DNA testing policies?
- **Do they...**
  - *Work all types of cases?*
  - *Work cases regardless of the submission of a suspect sample?*
  - *Work both subject and non-subject cases?*
- Contact lab personnel for assistance in evaluating evidence with respect to the lab's policies and capabilities

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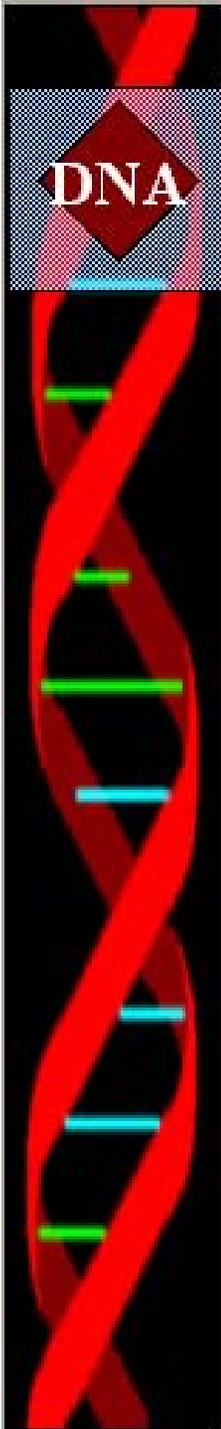
A diamond-shaped logo with a grid pattern and the letters "DNA" inside.

# Time to Submit!

- Follow your agency's and forensic lab's policies
  - Meet in person?
  - Submit only pre-approved items?
  - Special times & locations for submission?
  - Specific directions?
  - Prioritization?
    - i.e., if you get results on A, don't worry about B....
- Continue the investigation while waiting for results!

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A vertical graphic on the left side of the slide. It features a red double helix structure against a black background. The helix is composed of two red ribbons that twist around each other, connected by horizontal bars in green, blue, and cyan. At the top, a red diamond shape contains the word "DNA" in white, set against a grey grid background.

DNA

# Laboratory Analysis

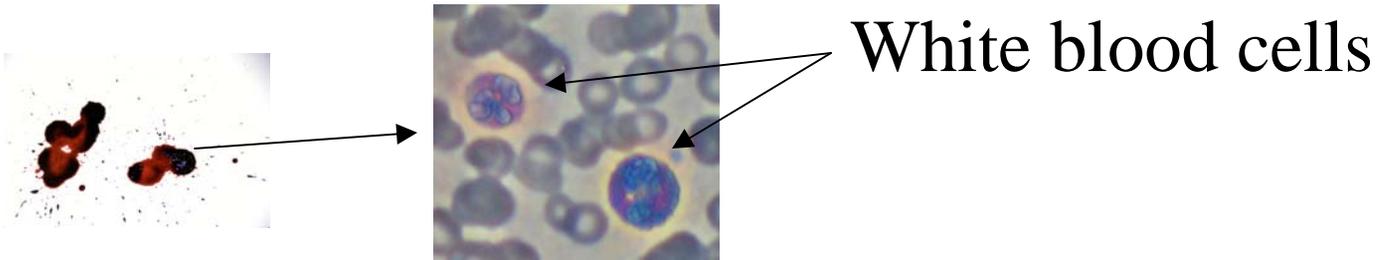
Proper Collection,  
Packaging and Preservation  
of **DNA** Evidence

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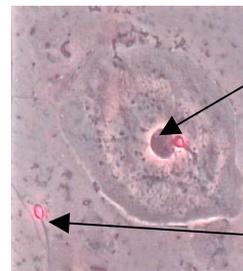
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# Where is DNA Found?

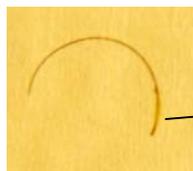


White blood cells



Epithelial cell

Sperm cell



Tissue cells

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# Typically Encountered Samples



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# Evidence Screening



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# Blood Examination

**\*Never assume a red stain is blood\***

- Presumptive testing
- Confirmatory testing
- Human origin testing

**\*Cannot tell age of a bloodstain\***

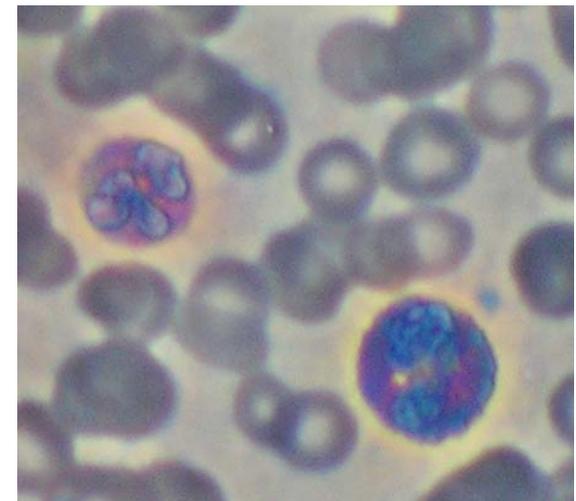
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# DNA Blood Facts

- Located in white blood cells
- If you can see it, we can test it
- Transfusions do not interfere with typing



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# Semen - General Rules

- Primary indicator of sexual activity
- Begin with body swabs, then to clothing and bedding
- With successful analysis of semen, limited further analysis will be performed



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# Semen Examination

- Presumptive testing
- Confirmatory testing
  - P30
  - Sperm

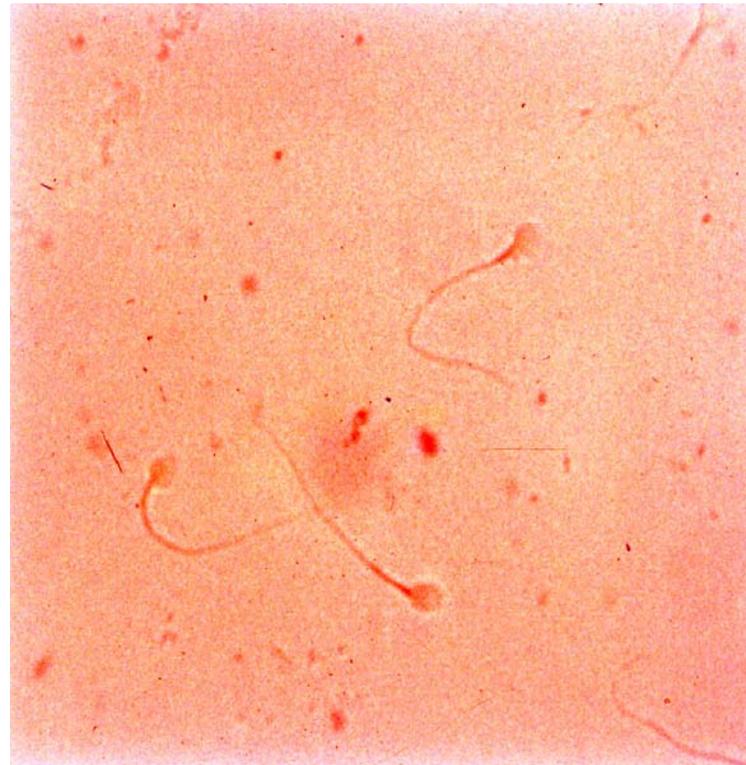


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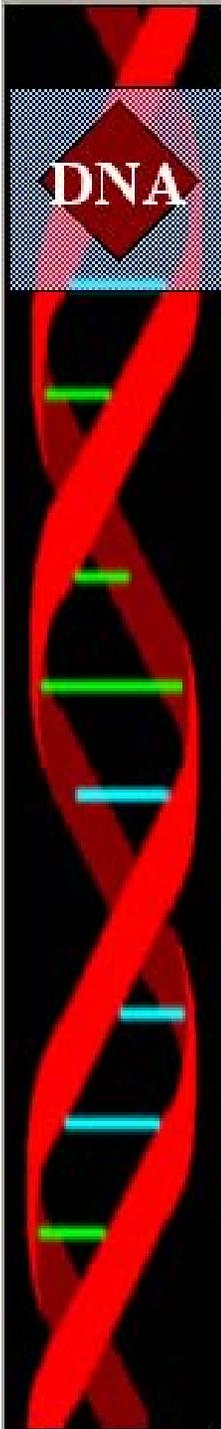
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# Human Sperm



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DNA

# How Many Sperm??

- Average Human Male
  - Deposits 3-6 ml of semen
  - 1 ml semen = > 100 million sperm
  - Possibly over 600 million sperm!!!!
- Vasectomized Male
  - Deposits 0 sperm

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A diamond-shaped logo with a grid pattern containing the letters "DNA".

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# How Long Can Sperm Last?

- Normally ~3-4 days in vaginal cavity of living woman
- Normally ~12 hours in rectal cavity of living person
- Normally ~6 hours in oral cavity of living person

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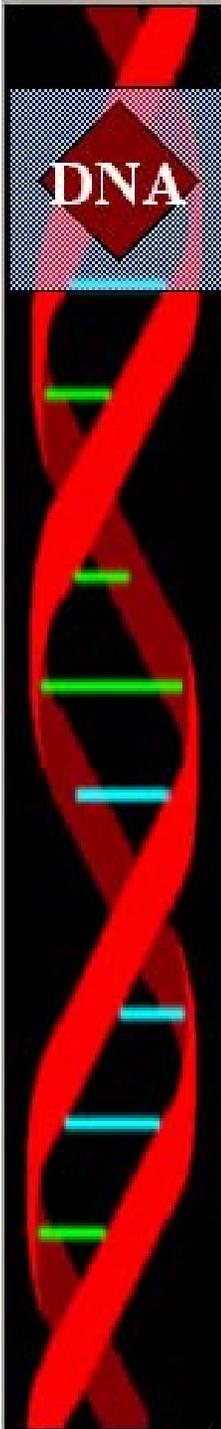
# How Long Can Sperm Last?

## From the Forensic Literature:

- Found in frozen body's vaginal cavity after 19 days
- Found in frozen body's rectal cavity after 3 years
- Found in mummified body's vaginal cavity after 3 years

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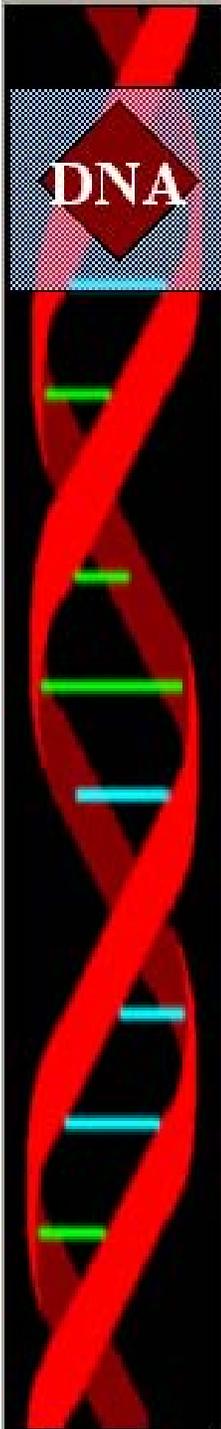
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# Reasons For Not Finding Sperm

- Acidic environment
- Multiple ejaculations
- Low sperm count
- Time
- Poor quality sperm

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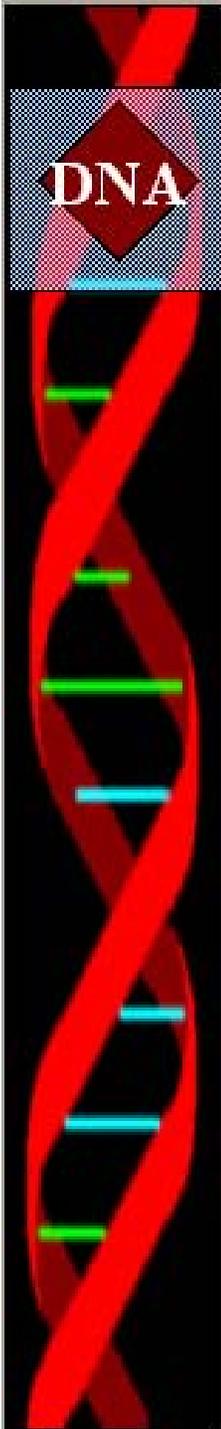
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# Reasons For Not Finding Sperm

- Victim bathed
- Suspect didn't ejaculate
- Bacteria ate them
- It didn't happen

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A vertical graphic on the left side of the slide showing a DNA double helix. The two strands are red, and the base pairs are represented by horizontal bars in green, cyan, and blue. At the top, a diamond-shaped box contains the word "DNA" in white text.

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# DNA Semen Facts

- Found in sperm head
- Need 100 sperm heads for testing
- Can separate sperm DNA from other cells in stain (vaginal cells)

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A diamond-shaped logo with a grid pattern and the letters "DNA" inside.

# Saliva Examination

- Presumptive
  - Amylase
- No confirmatory test

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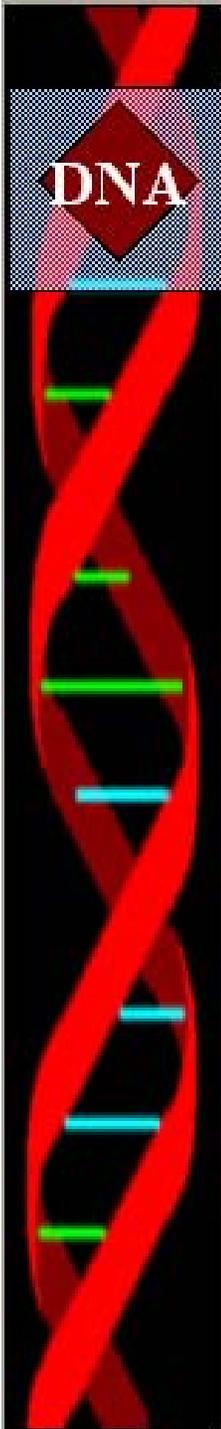
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# Hair Examination

- Hair or Fiber
- Human or animal
- Body area
- DNA located in root
- Microscopic comparisons **rarely** performed

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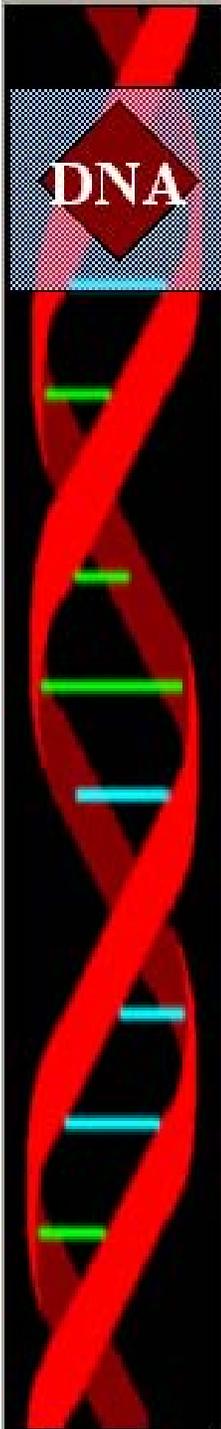
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# Urine

- Concentration varies, depending on time of void, dilution by fluid ingested
- Chemical *detection* tests are available
- Probative nature of urine
- Epithelial cells may be used for DNA, depending on the amount

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# Fecal Material

- No serological testing for identification
- Kits available for DNA testing from fecal material

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