

DISEASE LIST: TESTS WHICH ARE USEFUL FOR DIAGNOSING VARIOUS DISEASES IN RURAL & TROPICAL AREAS

This list is a guide to show when to use the laboratory procedures listed in combination with physical signs and symptoms. It lists tests that might be done when you are considering a possible diagnosis, and what a positive result means. Sometimes a positive test confirms the diagnosis and sometimes it leads you to suspect another diagnosis which is the true one. For example, if you think your patient has an acute abdomen but his urine shows glucose, it is possible that his abdominal pains are due to diabetic acidosis. If you think your patient has African sleeping sickness but his sedimentation rate is normal, this eliminates that diagnosis.

Results & Interpretation: + means Positive result, and - means Negative result. "Confirmative" means that this result could be caused by the disease in question, but it does not imply that the opposite result could never be found. The best tests for a particular disease or symptom are those where a positive result means one thing and a negative result means another, or where there is a clear difference in meaning for different ranges of quantitative measurements.

| DISEASE | SPECIMEN | TEST | RESULTS & INTERPRETATION |
|---|---------------------|---|--|
| Acute abdomen | Urine | Glucose | + consider diabetic acidosis |
| | Urine | Ketones | + confirmative, consider diabetic ketoacidosis |
| | Urine | Urobilinogen | + consider malaria, thalassemia, sickle cell disease, other liver disease, drug intoxication |
| | Urine | Nitrite | + consider urinary tract infection |
| | Urine | Bilirubin | + consider hepatitis, leptospirosis, other liver disease |
| | Stool | Blood | + consider enteric (typhoid) fever |
| | Blood smear | Blood smear: Schizonts Trophozoites Gametocytes | Patients can present with acute abdominal pain, guarding and rigidity, mimicking bowel perforation, acute appendicitis, acute cholecystitis, ureteric colic, etc. (Malaria can mimick almost anything!) |
| African sleeping sickness Human African Trypanosomias | Blood | Sedimentation rate | Very high (above 60), confirmative; Intermediate (30-60), doubtful; Normal (below 30), eliminates A wet smear of unstained blood or Giemsa-stained thick smear (more sensitive) is used to observe the mobile trypanosomes It requires immediate search for parasites because they are mobile for only 15-20 minutes. |
| | Blood | Blood smear | |
| | Blood | Hemoglobin | Low, confirmative |
| | Lymph | Lymph node aspiration | A rapid test for trypanosomes at a high dry magnification (X 400). It requires immediate search for parasites because they are mobile for only 15-20 minutes. |
| | Cerebrospinal fluid | Lumbar puncture | Lumbar puncture should always be performed in patients with parasitemia or lymphadenopathy. The double centrifugation technique is the most sensitive method to detect the trypanosomes |
| AIDS | Urine | Ketones | + confirmative |
| | Blood | Formol gel | + confirmative |
| | Blood | Hemoglobin | Low, confirmative |
| Allergy | Urine | Nitrite | + consider urinary infection |
| | Urine | Bilirubin | + consider liver disease |
| | Stool | Hematest | + consider schistosomes, other worms |
| Ameobic liver disease (abscess) | Urine | Bilirubin | + confirmative |
| | | Erlich's diazo reagent | + confirmative Pink or Red - early disease or wrong diagnosis |
| | | | |
| | | | |
| | | | |

| DISEASE | SPECIMEN | TEST | RESULTS & INTERPRETATION |
|--|----------------|---|--|
| Asthma | Urine | Nitrite | + consider urinary infection |
| | Urine | Bilirubin | + consider liver disease |
| | Stool | Hematest | + consider schistosomes, other worms |
| Cancer | Blood mount | Lagoons with broken fields | + confirmative |
| | Blood | Sedimentation rate | High, severe disease, spreading malignancy Normal or low, early disease or none |
| | Blood | Hemoglobin | Low, confirmative |
| | Urine | Carcinochrome reaction | + Confirms, or raises suspicion levels |
| Chaga's disease American Trypanosomiasis | Urine | Bilirubin | + confirmative |
| | Urine | Urobilinogen | + confirmative |
| Cholera | Urine | Urobilinogen | + consider malaria |
| | Stool | Clinitest | + confirmative or milk intolerance |
| Cirrhosis | Urine | Urobilinogen | + confirmative |
| | Urine | Bilirubin | + confirmative - eliminates |
| Colic (simple) (see also acute abdomen) | Stool | Blood | + consider some other cause - confirmative |
| | Stool | Clinitest | + consider milk intolerance |
| Dehydration | Urine | Specific gravity | High, confirmative Normal or low, eliminates |
| | Skin | Skin Tenting | High, confirmative |
| Dengue fever | Urine | Ketones | + consistent |
| | Urine | Blood | + may be hemorrhagic fever |
| | Stool | Blood | + may be hemorrhagic fever |
| Depression | Blood | Sedimentation rate | Normal, confirmative High, indicates a physical cause |
| | Blood Pressure | Elevated right sided systole & diastole | |
| Diabetes | Urine | Glucose | + confirmative - mild, well-treated, or over-treated |
| | Urine | Ketones | + confirmative, severe, under-treated |
| | Blood | Glucose | High, confirmative, needs treatment Low, over-treated or eliminates Normal, well-treated or eliminates |
| Dysentery | Stool | Hematest | + confirmative - consider ordinary diarrhea |
| Enteric (typhoid) fever | | Hematest | + confirmative, severe case |
| | Urine | Erlich's Diazo Reagent | + Pink or Red |
| Filariasis | Urine | Protein | + confirmative |

| DISEASE | SPECIMEN | TEST | RESULTS & INTERPRETATION |
|----------------------------|-------------|---|--|
| Gallbladder disease | Urine | Bilirubin | + confirmative |
| | Urine | Ketones | + confirmative - mild disease |
| | Urine | Glucose | + consider diabetes |
| | Stool | Clinitest | + consider milk intolerance |
| | Urine | Ketones | + confirmative |
| Heart failure | Stool | Clinitest | + consider milk intolerance |
| | Urine | Protein | + confirmative |
| | | Breath holding <20 sec. Pitting edema Capillary refill > 2 sec. Tachycardia, dyspnea | + confirmative |
| Heat stroke | Blood | Leucocytosis | + confirmative, severe |
| | Urine | Blood | + confirmative, severe |
| Hemorrhagic fever | Urine | Protein | + confirmative, severe |
| | Urine | Blood | + confirmative |
| | Stool | Hematest | + confirmative |
| Hepatitis | Blood | Hemoglobin | Low, confirmative |
| | Urine | Bilirubin | + confirmative - eliminates, or early stage |
| | Urine | Urobilinogen | + confirmative, see malaria also |
| Hookworm | Urine | Ketones | + confirmative |
| | Stool | Hematest | + confirmative; - improbable if neg. three times |
| | | | |
| Hypoglycemia | Blood | Hemoglobin | Low, confirmative |
| | Blood | Glucose | Normal or high, eliminates Low, confirms |
| Intestinal fluke | Urine | Ketones | + confirmative |
| Irritable bowel | Stool | Clinitest | + consider milk intolerance |
| | Stool | Hematest | + consider another cause |
| Kidney failure | Stool | Clinitest | + consider milk intolerance |
| | Urine | Protein | + confirmative, esp. nephrotic |
| | Urine | Blood Specific gravity | + confirmative Volhard's (Albarran's) dilution test |
| Kidney infection | Blood | Hemoglobin | Low, confirmative; Normal, recent onset or eliminates |
| | Breath odor | Fetid, fishy, metallic | |
| | Urine | Nitrite | + confirmative; - early or eliminates |
| | Urine | Blood | + confirmative; - early or eliminates |
| | Urine | Protein | + confirmative |
| | Urine | pH | pH 8 or higher, confirmative |

1. The bilirubin should be greater than the urobilinogen for hepatitis. If the urobilinogen is greater, the patient primarily has a blood disease such as malaria.

2. Malaria is a questionable diagnosis if the urine produced during the time of shaking chills (i.e. collected an hour or two after the onset of the chills) is confirmatively negative for urobilinogen with repeated determinations.

3. The diagnosis is questionable if the urine is confirmatively negative for urobilinogen all the time. However, it may be negative when the person feels fine and turn positive during an illness.

| DISEASE | SPECIMEN | TEST | RESULTS & INTERPRETATION |
|--------------------------------|----------|------------------------------------|---|
| Kidney stone | Urine | Blood | + confirmative; - not always eliminates |
| | Urine | Microscopy, Sternheimer's stain | pH <6.5: oxalate crystals/stones pH >7.0: staghorn calculi |
| Lassa fever | Back | Kidney Punch | + Costovertebral tenderness |
| | Urine | Blood | + confirmative |
| | Stool | Blood | + confirmative |
| Lead poisoning | Blood | Hemoglobin | Low, confirmative |
| | | | Normal, mild, recent, or eliminates |
| Leptospirosis | Urine | Urobilinogen | + confirmative |
| | Urine | Bilirubin | + confirmative |
| | Urine | Protein | + confirmative |
| Liver failure | Urine | Bilirubin ¹ | + confirmative - eliminates |
| Liver abscess, amebic | Urine | Bilirubin Ehrlich's diazo | + confirmative + pink or red |
| | Urine | Urobilinogen | + confirmative |
| (Also see causative diseases.) | | | |
| Liver fluke | Urine | Bilirubin | + confirmative |
| Malabsorption | Urine | Ketones | + confirmative - mild case or eliminates |
| | | Dry blood mount | Pock marks |
| | Blood | Hemoglobin | Low, confirmative |
| (Also see causative diseases.) | Stool | Clinitest | + due to milk intolerance |
| | | | |
| Malaria | Urine | Urobilinogen | + confirmative - questionable ² |
| | Blood | Hemoglobin | Low, confirmative |
| Malnutrition | Urine | Ketones ¹ | + confirmative - indicates recent food intake |
| | Blood | Hemoglobin | Low, confirmative |
| | | Dry blood mount | Pock marks |
| Measles | Urine | | |
| Milk intolerance | | Clinitest | + confirms the diagnosis - eliminates the diagnosis |
| Ovalocytosis | Urine | Urobilinogen ¹ | + confirmative |
| | Urine | Urobilinogen | - questionable ¹ |
| | Blood | Hemoglobin | Low, confirmative |
| Pellagra | Urine | pH ¹ | pH 7 or less, questionable |
| | Blood | Hemoglobin | Low, confirmative |
| | Urine | Ketones | + confirmative |
| Pelvic Inflammatory Disease | Blood | Leucocytosis | + confirmative, severe |

| DISEASE | SPECIMEN | TEST | RESULTS & INTERPRETATION |
|---|----------------|---------------------------------|---|
| Peptic ulcer | Stool | Hematest | + confirmative |
| | Blood | Hemoglobin | Low, confirmative |
| Pig-bel Plant poisoning: Ackee | Stool | Hematest | + confirmative |
| | Blood | Glucose | Low, confirmative Normal or high, eliminates |
| Plant poisoning: Mushrooms | Urine | Bilirubin | + confirmative |
| | Urine | Urobilinogen | + confirmative |
| Pneumonia | Urine | Bilirubin | + confirmative |
| | Urine | Urobilinogen Erlilch's diazo | + confirmative Egg yellow reaction |
| | Blood | Leucocytosis | + confirmative, severe |
| Relapsing fever | Urine | Bilirubin | |
| | Urine | Protein | + confirmative, not much |
| | Urine | Urobilinogen | + confirmative |
| | Urine | Blood | + confirmative with severe disease |
| | Stool | Hematest | + confirmative with severe disease |
| Rheumatic fever | Blood | Sedimentation rate | |
| Rheumatoid Arthritis | Blood | Leucocytosis | + confirmative, severe |
| | Synovial fluid | Mucin Clot Test | + confirmative, severe |
| Schistosomiasis hematobium | Urine | Blood | - eliminates if repeatedly neg. |
| Schistosomiasis japonicum | Stool | Hematest | + confirmative - questionable if repeatedly neg. |
| Schistosomiasis mansoni | Urine | Bilirubin | + confirmative |
| | Stool | Hematest | + confirmative - questionable if repeatedly neg. |
| | Urine | Bilirubin | + confirmative |
| Scurvy | Stool | Hematest | + confirmative (swallowed blood) - questionable if repeatedly neg. |
| | Blood | Hemoglobin | Low, confirmative |
| Sepsis / Trauma | Urine | Urobilinogen | + confirmative |
| | Urine | Bilirubin | + confirmative |
| | Urine | Protein | + confirmative |
| | Blood | Leucocytosis | + confirmative, severe |
| Sickle cell disease | Urine | Urobilinogen | + confirmative • questionable if repeatedly neg. |
| | Urine | Bilirubin | + confirmative |
| | Blood | Hemoglobin | Low, confirmative Normal or high, questionable |
| Spotted fever | Urine | Bilirubin | + confirmative |
| Sprue | Stool | pH | pH 6 or less, confirmative pH 7 or more, eliminates |
| | Blood | Hemoglobin | Low, confirmative |

| DISEASE | SPECIMEN | TEST | RESULTS & INTERPRETATION |
|---|-----------------|---------------------------|--|
| Strongyloidiasis | Stool | Hematest | + confirmative |
| Thalassemia | Urine | Urobilinogen | + confirmative - eliminates, or no current crisis |
| | Blood | Hemoglobin | Low, confirmative Normal or high, eliminates or mild |
| Turista (Traveler's diarrhea) | Urine | Ketones | + confirmative, severe, or vomiting also |
| | Stool | Clintest | + consider milk intolerance |
| | Stool | Hematest | + consider dysentery |
| Toxemia of Pregnancy (Eclampsia) | Urine | Protein | + confirmative; - nearly eliminates |
| | Blood | High Blood Pressure | |
| Tropical splenomegaly | | Urobilinogen | + confirmative; - eliminates if repeatedly |
| | Blood | Hemoglobin | Low, confirmative |
| Tuberculosis | Skin | Tuberculin (Mantoux) Test | + confirmative |
| | Urine | Erlich's diazo | +Pink or red |
| Typhus | Urine | Bilirubin | + confirmative with severe disease |
| | Urine | Urobilinogen | + confirmative with severe disease |
| Urinary infection | | Nitrite | + confirmative with severe disease - eliminates, or early disease |
| | Urine | pH | pH 8 or more, confirmative |
| | Urine | Blood | + confirmative |
| | Urine | Protein | + confirmative |
| Visceral leishmaniasis | Urine----- | Urobilinogen | + confirmative; - eliminates if repeatedly neg. |
| | Blood | Hemoglobin | Low, confirmative |
| | Blood | Formol gel test | + confirmative - eliminates, or very early disease |
| Yellow fever | Urine----- | Bilirubin | + confirmative - eliminates, or early disease |
| | Urine | Urobilinogen | + confirmative |
| | Urine | Blood | + confirmative |
| | Stool | Blood | + confirmative |