## An introduction to faecal parasite examination

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**There are considerable differences in practice between laboratories. The capability and confidence limits must be known. In the USA, CAP mandates a specific approach to faecal parasite examination; concentrate and permanent stain.**

**Sample transit.** Samples deteriorate considerably during transit and therefore benefit from fixative. Various agents are used including formalin, PVA, mercury, copper and zinc based.

**Sample number**. 3 is better but we can live with a series of 2 samples. One study indicated up to 22% increase in yield on the third sample, and the minimum for Giardia FIA is 2). Various concentration devices are used.

**Immunoassay**. IA should not be used to confirm O & P examination. Assay wells need washing but should be washed gently. Sensitivity may be poor so that a negative result may be returned from sample with low level antigen present. Giardia and Crytosporidium assays can be read with FITC alone.

**Rapid tests**. These are helpful but not perfect e.g. kits usually do not distinguish between *E histolytica*
and
*E dispar*
. Lateral flow devices do not cope well with lots of faecal sample. In real conditions any colour in a test well equates to a positive result.

**Special stains.** These are labour intensive especially if for Microsporidia and there is as yet no commercial reagent. They should be run with concentrated sediment. These are more easily detected in clean samples e.g. nasopharyngeal aspirate, and are particularly difficult to miss in stools. [ Trichrome stain tips : **11 ways to make a better slide**]

In view of the need for specific ordering, different patient groups trigger different tests:

1. immunocompromised with diarrhoea
2. municipal water-borne outbreak
3. history of international travel & diarrhoea

**Reporting**. Standardised comments are helpful. Free text should be avoided. With immunoassays, reports need to state what was tested, either present or negative, and must be clear about the findings. Names should be given as Genus, species and stage. Quantity of parasite present is still considered useful by some. Non-pathogens are reported as indicators of exposure to risky water or food source. Artifacts – report some, like Charcot-Leiden crystals, human polymorph nuclei but do not report pollen or chemical crystals.

Do not perform a parasite examination if the patient has been in hospital for more than 3 days. CAP dictates the need for a faecal concentrate and a stained faecal smear.

Cryptosporidium stools contain spores and are immediately infectious. Cyclospora is less infectious.

**Notes by TJJI, AUG-10.**