

# Types of Parasite Antigens

## 1. Soluble exo-antigens:

Released from living parasites, parasitized cells or cultured helminth cell lines and termed as excretory / secretory (ES); excretory / secretory / tissue turnover (EST) or metabolic antigens.

## 2. Soluble somatic antigens:

Extracted from parasites or parasitized cells and may be surface or internal antigens. Examples: adult worm extract (AWE); larval somatic antigens (LSA); detergent solubilized protozoa surface antigens of infected cells and parasites... etc.

## 3. Dead or fragmented parasites.

## 4. Whole living parasite.

## 5. Body fluids of nematodes.

## 6. Cystic fluid of larval cestodes.

## **Clinical manifestations of acquired immunity**

**1. Absence of an effective immune response** in the case, the patients do not develop any effective immunity although signs of the host immune response are present, e.g specific antibodies. Typical examples are African trypanosomiasis and visceral leishmaniasis.

### **2. Non-sterilizing immunity (incomplete immunity)**

The majority of parasitic infection induces this type of immunity which is **only partially effective as it causes clinical recovery associated with persistence of the parasite at relatively low density.** This phenomenon has been referred to as "**Premunition**" which is characteristic for human malaria, toxoplasmosis & chagas disease.

In helminthiasis, it corresponds to "**concomitant immunity**" which protects the host against re-infection but is inactive against established worms from primary or previous infections (e.g Schistosomiasis).

### **3. Sterilizing immunity**

This is **very rarely** met in human parasitic infections e.g cutaneous leishmaniasis