

# JOURNAL-BASED LEARNING EXERCISES



Please select your choice of correct answers and complete the exercises online at: [www.ibms.org/cpd/jbl](http://www.ibms.org/cpd/jbl)

## DEADLINE WEDNESDAY 5 JUNE 2019

<b>Diagnostic accuracy, risk assessment, and cost-effectiveness of component-resolved diagnostics for food allergy: A systematic review.</b> Flores Kim J, McCleary N, Nwaru BI, Stoddart A, Sheikh A. <i>Allergy</i> 2018; <b>73</b> (8): 1609–21 <a href="https://onlinelibrary.wiley.com/doi/epdf/10.1111/all.13399">https://onlinelibrary.wiley.com/doi/epdf/10.1111/all.13399</a> . Assessment No 030519		<b>Association of <i>Helicobacter pylori</i> and protozoal parasites in patients with chronic diarrhoea.</b> Yakoob J, Abbas Z, Moore J <i>et al. Br J Biomed Sci</i> 2018; <b>75</b> (3): 105–9. Assessment No 030119	
01	Prevalence of food allergy has been estimated to be between 3% and 6% for children and between 4% and 7% for adults in economically developed countries.	01	<i>E. moshkovskii</i> and <i>E. histolytica</i> are distinguishable microscopically.
02	Gal d1 had higher sensitivity and lower specificity than SPT and sIgE.	02	Results showed that patients were more likely to be infected with <i>Blastocystis</i> sp. and <i>E. dispar</i> than controls.
03	Twelve other studies were found to have an unclear ROB, mainly because they did not explicitly indicate their sampling methodology and/or did not avoid inappropriate exclusions.	03	Dietary non-starch polysaccharides appear to be important factors in controlling prevalence of <i>H. pylori</i> and parasitic infection.
04	The studies included in our review that analysed peanut components also found that sIgE levels to the components Ara h1, 3, 8, and 9 showed varying results, most with underperforming diagnostic values.	04	Of the patients with known symptoms of diarrhoea, 37 were found to have <i>E. dispar</i> .
05	Two studies reported data on CRD for shrimp allergy. One study tested the component Pen a1, and the other study investigated the components Lit v1 and Lit v4.	05	<i>E. histolytica</i> and <i>E. dispar</i> require PCR using specific primers for differentiation.
06	Two studies evaluated the diagnostic accuracy of CRD for hazelnut allergy and the following components were assessed: Cor a1, Cor a8, Cor a9 and Cor a14.	06	Abdominal discomfort is not associated with <i>Entamoeba histolytica</i> infection.
07	Diagnosis of food allergy is dependent on a thorough clinical history as well as an objective marker of allergic sensitisation and, in some cases, oral food challenge tests.	07	Results showed the prevalence of <i>E. histolytica</i> exceeded that of <i>E. dispar</i> .
08	The reported sensitivity-specificity for Cor a1 was 7.7% and 79.3% (at >0.35 kUa/L).	08	The study revealed that patients were more likely to be co-infected with <i>Blastocystis</i> sp. and <i>E. histolytica</i> .
09	For peanut allergy, Ara h6 showed higher DTA measures than SPT and sIgE.	09	Amoebiasis is a faecal-oral route transmitted infection with the amoebas of the <i>Entamoeba</i> group.
10	None of the studies meeting our inclusion criteria evaluated the cost-effectiveness of CRD or made mention of any economic considerations.	10	Over 15% of giardiasis cases may be asymptomatic.
11	Three studies evaluated CRD for hens' egg allergy and the following components were assessed: Gal d1, Gal d2, Gal d5, and Gal d7.	11	Of the 33 patients infected with <i>H. pylori</i> , 27 were found to have at least one parasite.
12	For heated egg allergy, the reported sensitivity-specificity for these components were as follows: for Gal d1, 84.2% and 89.8% (at >4.4 kUa/L).	12	The authors hypothesise that <i>H. pylori</i> may influence the virulence of parasitic protozoan infections.
13	Selected CRD components have the potential to diagnose food allergies with a higher specificity and sensitivity than current first line tests.	13	Mucosal dendritic cells are not involved in creating an overall tolerant state towards intestinal antigens.
14	A quantitative synthesis of CRD diagnostic accuracy data is not possible because of the paucity of studies for each of the components that have been studied.	14	The results obtained led to the hypothesis that there may be a mechanical link to the co-infection seen.
15	Two studies assessing CRD for hens' egg allergy found that sIgE levels for all components tested were higher in patients with more severe allergies.	15	Nineteen <i>Blastocystis</i> subtypes have been identified using small subunit ribosomal RNA differences.
16	The component with the highest diagnostic accuracy, along with the sensitivity-specificity pairs, was Cor a14 for hazelnut allergy (100% and 93.8%).	16	Results showed an association with <i>H. pylori</i> and <i>E. dispar</i> .
17	There is a need to standardise all CRD assays to ensure that results are comparable between different tests.	17	In the study, the exclusion criteria for participants included those aged >60 years.
18	The component with the highest diagnostic accuracy for cows' milk allergy, along with the sensitivity-specificity pairs, was Bos d4 (82.0% and 67.5%).	18	<i>Blastocystis</i> sp. transmission occurs through water but not faecal-oral contamination.
19	It is likely that the prevalence of allergies in the study populations is considerably higher than in more population-based settings, rendering the tests' PPVs higher and NPVs lower than they would be in populations with lower allergy prevalence.	19	Patients and controls were not age matched in the study.
20	This study found that all severe allergic patients were sensitised to Ara h2 or Ara h6, and none of them were sensitised to Ara h1, 3, or 9 without Ara h2.	20	<i>Helicobacter pylori</i> infection is associated with lymphoma.
REFLECTIVE LEARNING			
01	Critically appraise the cost-effectiveness of using CRD testing in your laboratory.	The study was carried out in Pakistan reflecting the infections found in developing countries. How could your laboratory improve detection and identification of parasitic infections given the low numbers seen in the UK?	
02	Discuss the relative sensitivity and specificity of peanut allergy testing using SPT, mixes, individual allergens and CRD.		