Table III. Cont'd

No.	Statement	Evidence
5.6	AD in adults **is probably associated** with congestive heart failure (**moderate** certainty evidence) *Remark: The evidence suggests a small to moderate magnitude of association between AD and congestive heart failure in adults, with greater AD severity associated with a greater magnitude of association.*	34,89,93,97,112,142
5.7	AD in adults **is probably associated** with thromboembolic diseases (**moderate** certainty evidence) *Remark: The evidence suggests a small magnitude of association between AD and thromboembolic diseases in adults.*	98
5.8	AD in adults **may be associated** with cardiovascular death (**low** certainty evidence) *Remark: The evidence suggests a small magnitude of association between AD and cardiovascular death in adults.*	88,94,99,142
Metabolic disorders		
6.0	AD in adults **is probably associated** with obesity (**moderate** certainty evidence)	22,30,89,90,100-103,112,136,150,152
6.1	AD in adults **is probably associated** with dyslipidemia (**moderate** certainty evidence)	15,21,30,68,84,86-88,90,92,136,150,152,153
6.2	AD in adults may **not be associated** with diabetes (**low** certainty evidence)	15,21,22,30,68,83-90,92,97,104,112,136,150,152,153
6.3	The association between AD in adults and metabolic syndrome **is uncertain** (**very low** certainty evidence)	51,152,153
Bone health		
7.0	AD in adults **is associated** with osteoporosis (**high** certainty evidence)	15,105,154
7.1	AD in adults **is associated** with bone fractures (**moderate** certainty evidence)	106,155
Skin infection		
8.0	AD in adults **is associated** with skin infection (**moderate** certainty evidence)	107-111,168

Bold is used to highlight the strength of the association statement and the certainty of the evidence.
AA, Alopecia areata; *AD,* atopic dermatitis; *ADHD,* attention deficit hyperactivity disorder.

the associations between AD and allergic conjunctivitis and eosinophilic esophagitis (Supplementary Tables IV and V; available via Mendeley at https://data.mendeley.com/datasets/cm9h5g2m63/1).

IMMUNE-MEDIATED CONDITIONS

The pathogenesis of AD is primarily rooted in a feedback loop of skin barrier dysfunction and an aberrant immune response leading to inflammation.[120] While a genetic predisposition to barrier dysfunction may be the inciting event for many people with AD, multiple immune-related genes have also been associated with AD.[121] This may, at least in part, explain the association between AD and various autoimmune conditions; in a Danish population-based study, AD was associated with 2.5 times the odds of having any autoimmune condition and 3.5 times the odds of having 2 or more autoimmune conditions compared to the general population.[9]

Alopecia areata

Epidemiologic studies consistently show an association between AD and alopecia areata (AA).[122] In the Danish study mentioned above, the adjusted odds ratio (OR) for the association between AD and AA was 26.31 (95% CI, 14.48-47.80) (Supplementary Table VI; available via Mendeley at https://data.mendeley.com/datasets/cm9h5g2m63/1).[9] While some of the strength of that association may be related to diagnostic bias (ie, dermatologists treating patients for 1 of those diagnoses are more likely to make a formal, coded diagnosis of the other condition), the association is likely valid. There is also a widespread belief that AD portends a worse prognosis for AA in terms of the severity and response to treatment, but studies are limited. In an AA registry study, having AD was associated with a higher likelihood of having alopecia totalis or universalis, but the association was not statistically significant (OR 1.24; 95% CI, 0.95-1.61).[123] While there are