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## Diabetes



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testing at ARUP Laboratories



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When pursuing antibody testing to determine the presence of autoimmune diabetes mellitus (DM), **perform at least two of the following antibody tests:**



### Laboratory Testing at ARUP

test code	test name
2001771	Glutamic Acid Decarboxylase Antibody
3001499	Islet Antigen-2 (IA-2) Autoantibody, Serum
2006196	Zinc Transporter 8 Antibody
0050138	Islet Cell Cytoplasmic Antibody, IgG (ICA)
0099228	Insulin Antibody (IAA)*

\* Used to determine presence of antibodies to insulin analogues.

### Indications for Autoimmune Diabetes Mellitus Insulin Antibody Testing

- Most useful in establishing autoimmune etiology in previously diagnosed type 1 DM.
- Order at least two antibody tests; **do not order individual antibody tests.**
- For most cases, use glutamic acid decarboxylase antibody (GADA) in combination with one or more of the following: IA-2 antibody, zinc transporter 8 (ZnT8) antibody, islet cell antibody (ICA), and insulin antibody (IA).<sup>1</sup>

<b>Type 1 DM</b>	<ul style="list-style-type: none"> <li>• Patient should have previously diagnosed DM: <ul style="list-style-type: none"> <li>◦ Antibody testing is not useful for the diagnosis of DM.</li> <li>◦ Testing is not recommended for evaluating autoimmune etiology in patients receiving insulin &gt;two weeks, as insulin antibody formation may occur (false-positive test result possible).</li> </ul> </li> <li>• Most useful in newly diagnosed DM in children &lt;18 years to establish autoimmune etiology.<sup>2,3</sup></li> <li>• May be useful in difficult adult cases when it is unclear if patient has type 1 or 2 DM.<sup>4</sup></li> </ul>
<b>Type 2 DM</b>	<ul style="list-style-type: none"> <li>• No indication for routine evaluation or management.<sup>5</sup></li> </ul>
<b>Screening</b>	<ul style="list-style-type: none"> <li>• Not recommended for screening family members of patients with type 1 DM (risk prediction) except in research settings.<sup>6</sup></li> </ul>
<b>Limited Use</b>	<ul style="list-style-type: none"> <li>• Latent autoimmune DM in adults (LADA): differentiates LADA from type 2 DM.<sup>7,8,9</sup></li> <li>• Genetic testing: identifies patients with DM for whom a genetic etiology is suspected (e.g., monogenic DM, maturity-onset diabetes of the young [MODY]).<sup>4,10</sup> Lack of antibodies suggests a genetic disorder.</li> <li>• Gestational diabetes mellitus (GDM): <ul style="list-style-type: none"> <li>◦ Screen women with history of GDM to identify those at high risk for progression to type 1 DM.<sup>4,11,12</sup></li> <li>◦ No evidence to suggest test results alter outcomes or improve care when compared to intermittent hemoglobin A1c testing.<sup>4,11</sup></li> </ul> </li> </ul>

**References:** <sup>1</sup>Insel, 2015; <sup>2</sup>ADA, 2016; <sup>3</sup>AACE, 2015; <sup>4</sup>Bingley, 2010; <sup>5</sup>ADA, 2014; <sup>6</sup>ADA, 2016; <sup>7</sup>Lampasona, 2010; <sup>8</sup>Strenström, 2005; <sup>9</sup>Nambam, 2010; <sup>10</sup>NIH, 2014; <sup>11</sup>Nilsson, 2007; <sup>12</sup>de Leiva, 2007

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