**Supplementary Table S5:** Temporal trends in the incidence of celiac disease

A) All ages

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Study** | **Country (Area)** | **Time Period** | **AAPC (95% CI)** | **Inflection Point(s)** | **APC (95% CI) by Segment** |
| **Northern Europe** |
| Grode 20181 | Denmark (Nationwide) | 1980-2016 | 7.8% (6.9, 8.7)† | N/A | N/A |
| Hawkes 20002 | UK (Cardiff & Vale of Glamorgan, Wales) | 1981-1995 | 9.4% (3.9, 15.1)† | None | - |
| Hurley 20123 | UK (Cardiff & Vale of Glamorgan, Wales) | 1996-2005 | 10.4% (5.5, 15.4)† | None | - |
| Hawkes 2000, Hurley 2012±2,3 | UK (Cardiff & Vale of Glamorgan, Wales) | 1981-2005± | 10.5% (8.7, 12.3)† | None | - |
| Fowell 20064 | UK (East Dorset, England) | 1993-2002 | 11.4% (2.4, 21.1)† | N/A | N/A |
| Stroud 20195 | UK (Southern England | 1993-2017 | 5.1% (2.2, 8.0)† | N/A | N/A |
| West 20146 | UK (Nationwide) | 1990-2011 | 5.5% (4.6, 6.5)† | None | - |
| West 20197a | UK (Nationwide) | 2005-2015 | 3.1% (–0.6, 7.1) | 2011 | 1) 5.0% (3.1, 7.1)†2) –0.3% (-7.2, 7.2) |
| West 2014, West 20196,7 | UK (Nationwide) | 1990-2015 | 5.0% (4.4, 5.7)† | None | - |
| **Southern Europe** |
| Lanzarotto 2004, Lanzini 20058,9 | Italy (Brescia) | 1996-2003± | 18.2% (12.8, 23.8)† | N/A | N/A |
| Angeli 201210 | Italy (Terni) | 2002-2010 | –1.5% (–7.8, 5.2) | N/A | N/A |
| **Western Europe** |
| Gutschmidt 198711 | Germany (West Berlin) | 1979-1984 | 11.9% (–0.3, 25.5) | N/A | N/A |
| Jansen 199312 | Netherlands (Nationwide) | 1976-1992 | 4.0% (0.7, 7.3)† | 1987 | 1) 1.0% (–2.1, 4.1)2) 11.6% (1.8, 22.4)† |
| Burger 201413 | Netherlands (Nationwide) | 1995-2010 | 6.5% (4.6, 8.4)† | - | N/A |
| Jansen 1993, Burger 2014±12,13 | Netherlands (Nationwide) | 1975-2010± | 7.6% (3.9, 11.5)† | 1989/1995 | 1) 1.3% (–1.3, 4.0)2) 26.4% (2.2, 56.3)†3) 6.8% (4.9, 8.7)† |
| **Oceania** |
| Cook 200414 | New Zealand (Canterbury) | 1970-1999 | 8.9% (6.1, 11.8)† | 1991 | 1) 4.3% (1.3, 7.3)†2) 22.0% (14.3, 30.3)† |
| **Northern America** |
| Stewart 201115 | Canada (Calgary) | 2004-2008 | 10.2% (–0.9, 22.5) | N/A | N/A |
| Murray 200316 | United States (Olmsted County) | 1950-2001 | 7.6% (2.7, 12.6)† | N/A | N/A |
| Ludvigsson 201317 | United States (Olmsted County) | 2000-2010 | 4.6% (–2.0, 11.5) | None | - |
| Murray 2003, Ludvigsson 2013±16,17 | United States (Olmsted County) | 1950-2010± | 8.1% (4.6, 11.7)† | None | - |

†statistically significant increase or decrease (p < 0.05) ±temporal data from studies combined given similar demographic and geographic region studied
N/A = insufficient data to assess for inflection point (<10 data points)

a Estimates from original study as authors performed temporal analysis using same methodology

B) Children

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Study** | **Country (Area)** | **Time Period** | **AAPC (95% CI)** | **Inflection Point(s)** | **APC (95% CI) by Segment** |
| **Northern Europe** |
| Grode 20181 | Denmark (Nationwide) | 1980-2016 | 8.7% (6.7, 10.8)† | N/A | N/A |
| Dydensborg 201218 | Denmark (Nationwide) | 1996-2009 | 12.8% (7.2, 18.6)† | 2002 | 1) 21.7% (9.4, 35.4)†2) 5.6% (–0.3, 11.8) |
| Ress 201219 | Estonia (Nationwide) | 1976-2010 | 8.2% (3.1, 13.5)† | N/A | N/A |
| Kivela 201520 | Finland (Tampere) | 2001-2013 | 3.3% (–0.9, 7.8) | 2007 | 1) 10.1% (2.3, 18.5)†2) –3.0% (–9.1, 3.6) |
| Namatovu 201421 | Sweden (Nationwide) | 1973-2009 | 5.1 % (1.4, 8.9)† | 1994/1998/ 2003 | 1) 9.7% (8.0, 11.4)†2) –21.3 (–39.2, 2.0)3) 21.9% (5.9, 40.3)†4) –3.1% (–9.2, 3.4) |
| Tapsas 201522 | Sweden (Östergötland) | 1973-2013 | 5.5% (3.3, 7.8)† | 1989 | 1) 10.0% (4.6, 15.6)†2) 2.6% (1.0, 4.3)† |
| Hawkes 20002 | UK (Cardiff & Vale of Glamorgan, Wales) | 1981-1995 | 1.5% (–5.7, 9.2) | None | - |
| Hurley 20123 | UK (Cardiff and Vale of Glamorgan, Wales) | 1996-2005 | 18.9% (9.7, 28.7)† | None | - |
| Hawkes 2000, Hurley 2012±2,3 | UK (Cardiff & Vale of Glamorgan, Wales) | 1981-2005 | 6.0% (3.1, 9.0)† | None | - |
| White 201323 | UK (Southeast Scotland, Scotland) | 1990-2009 | 12.7% (9.9, 15.6)† | None | - |
| Lister 201824 | UK (Southeast Scotland, Scotland) | 2010-2016 | 17.4% (13.0, 22.0)† | N/A | N/A |
| White 2013, Lister 2018±23,24 | UK (Southeast Scotland, Scotland) | 1990-2016 | 12.8% (11.4, 14.1)† | None | - |
| Whyte 201325 | UK (South Wales, Wales) | 2005-2011 | 5.8% (–2.9, 15.3) | N/A | N/A |
| **Western Europe** |
| Burger 201413 | Netherlands (Nationwide) | 1995-2010 | 8.9% (7.3, 10.6)† | N/A | N/A |
| **Northern America** |
| McGowan 200926 | Canada (Calgary) | 1990-2006 | 9.9% (0.6, 20.1)† | 1996 | 1) –13.9% (–31.1, 7.7)2) 27.2% (15.8, 39.8)† |
| Stewart 201327 | Canada (Calgary) | 2004-2008 | 10.6 (–18.6, 50.3) | N/A | N/A |
| McGowan 2009, Stewart 2013±26,27 | Canada (Calgary) | 1990-2008 | 12.7% (–0.4, 27.6) | 1996 | 1) –10.6% (–38.2, 29.4)2) 26.5% (14.9, 39.4)† |
| Rajani 201028 | Canada (Northern Alberta) | 1998-2007 | 60.8% (34.4, 92.4)† | 2005 | 1) 87.3% (45.9, 140.6)†2) –5.7% (–48.0, 70.8) |
| Murray 200316 | United States (Olmsted County) | 1950-2001 | 7.5% (1.2, 14.2)† | N/A | N/A |
| Almallouhi 201729 | United States (Olmsted County) | 2000-2014 | 6.8% (3.9, 9.9)† | 2010 | 1) 13.4% (10.2, 16.7)†2) –8.0% (–15.7, 0.3) |
| Murray 2003, Almallouhi 2017±16,29 | United States (Olmsted County) | 1950-2014 | 7.0% (1.2, 13.2)† | 1985/2010 | 1) 3.1 (–8.3, 16.0)2) 14.9% (10.9, 19.0)†3) –9.2% (–18.8, 1.6) |

†statistically significant increase or decrease (p < 0.05) ±temporal data from studies combined given similar demographic and geographic region studied
N/A = insufficient data to assess for inflection point (<10 data points)

C) Adults

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Study** | **Country (Area)** | **Time Period** | **AAPC (95% CI)** | **Inflection Point(s)** | **APC (95% CI) by Segment** |
| **Northern Europe** |
| Bode 199630 | Denmark (Copenhagen) | 1976-1991 | –1.8% (–7.2, 3.9) | None | - |
| Grode 20181 | Denmark (Nationwide) | 1980-2016 | 7.3% (6.6, 8.0)† | N/A | N/A |
| Collin 200731 | Finland (Nationwide) | 1980-2003 | 9.7% (4.3, 15.5)† | N/A | N/A |
| Virta 201732 | Finland (Nationwide) | 2005-2014 | –3.4% (–4.6, –2.2)† | N/A | N/A |
| Collin 2007, Virta 2017±31,32 | Finland (Nationwide) | 1980-2014 | 5.0% (2.7, 7.3)† | 2006 | 1) 8.3% (4.9, 11.9)†2) –4.3% (–10.3, 2.0) |
| Midhagen 198833 | Sweden (Not stated) | 1976-1986 | 7.3% (0.1, 15.1)† | None | - |
| Hawkes 20002 | UK (Cardiff & Vale of Glamorgan, Wales) | 1981-1995 | 11.6% (5.5, 18.0)† | None | - |
| Hurley 20123 | UK (Cardiff and Vale of Glamorgan, Wales) | 1996-2005 | 9.0% (3.7, 14.6)† | None | - |
| Hawkes 2000, Hurley 2012±2,3 | UK (Cardiff & Vale of Glamorgan, Wales) | 1981-2005 | 11.3% (9.3, 13.4)† | None | - |
| **Southern Europe** |
| Fernandez 201034 | Spain (Vigo) | 1986-2008 | 25.3% (14.2, 37.5)† | None | - |
| **Western Europe** |
| Burger 201413 | Netherlands (Nationwide) | 1995-2010 | 5.4% (3.3, 7.6)† | N/A | N/A |
| **Northern America** |
| Murray 200316 | United States (Olmsted County) | 1950-2001 | 8.1% (2.3, 14.2)† | N/A | N/A |
| Murray 2003, Ludvigsson 2013±16,17 | United States (Olmsted County) | 1950-2010 | 8.9% (4.1, 14.0)† | N/A | N/A |

†statistically significant increase or decrease (p < 0.05) ±temporal data from studies combined given similar demographic and geographic region studied
N/A = insufficient data to assess for inflection point (<10 data points)

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