



Unit of Epidemiology

# TREND IN DISABILITY FREE LIFE EXPECTANCY IN BELGIUM BETWEEN 1997 AND 2004

H. Van Oyen

B. Cox

# OBJECTIVE

To assess, at age 0 and at age 65, trends in

- ❖ Life Expectancy (LE)
- ❖ Disability Free Life Expectancy (DFLE)
- ❖ Life Expectancy with disability by severity level
  - ❖ Moderate: MDLE
  - ❖ Severe: SDLE

To evaluate the significance of any difference in the observed compression / expansion

- ❖ by gender
- ❖ by region



# DATA

❖ **Mortality: 1997, 2001, 2004**

**Life table: last interval 100-105 years**

❖ **Disability: Health interview survey 1997, 2001, 2004**

**Face to Face**

**N: about 10000 – 13000 each survey**

**Response rate : 60%**



# Health questions disability

## ❖ Screening: Chronic morbidity

**Do you suffer from one or more longstanding diseases, chronic conditions or handicaps?**

**yes**

**versus**

**no**



# Health questions disability

Are you restricted in your daily activities due to this (these) illness(es), chronic condition(s) or handicap(s)?

continuously

→ severe disability

every now and then

→ moderate disability

seldom or not

+

→ no disability

no chron disease



# Estimation method

❖ Sullivan

❖ Variance: excluding part due to mortality

❖ Trends: linear regression weighted by the inverse of the variance of the expectancy

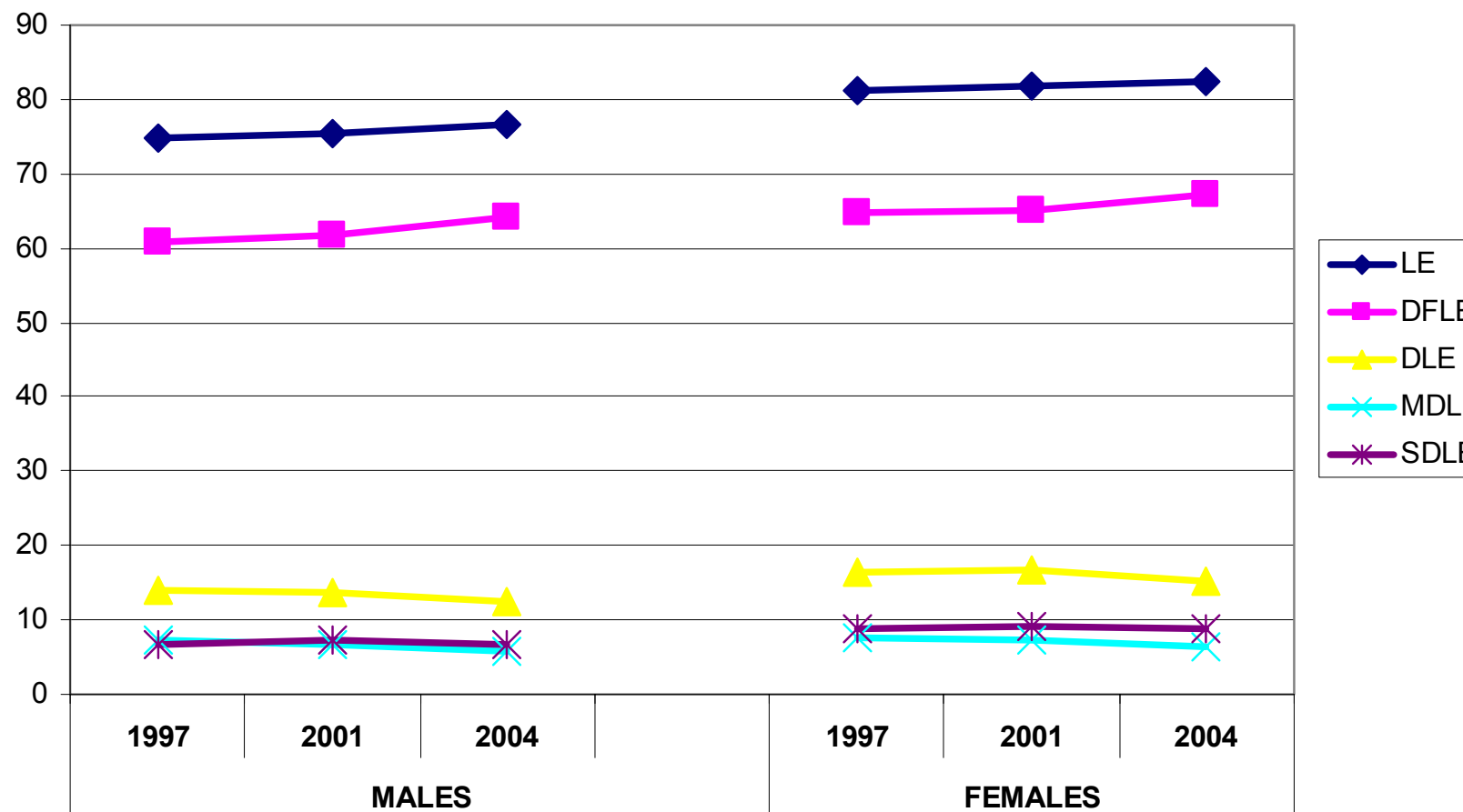


# Total Life Expectancy, Disability Free Life Expectancy and Life Expectancy with Disability at birth, Belgium, 1997-2004

		1997	2001	2004
<b>MALES</b>	<b>Total Life Expectancy</b>	<b>74.65</b>	<b>75.42</b>	<b>76.47</b>
	<b>DFLE</b>	<b>60.68</b>	<b>61.64</b>	<b>64.03</b>
	<b>With Disability</b>	<b>13.97</b>	<b>13.78</b>	<b>12.44</b>
	<b>Moderate</b>	<b>7.28</b>	<b>6.59</b>	<b>5.63</b>
	<b>Severe</b>	<b>6.69</b>	<b>7.19</b>	<b>6.81</b>
<b>FEMALES</b>	<b>Total Life Expectancy</b>	<b>81.07</b>	<b>81.67</b>	<b>82.36</b>
	<b>DFLE</b>	<b>64.65</b>	<b>65.09</b>	<b>67.12</b>
	<b>With Disability</b>	<b>16.42</b>	<b>16.58</b>	<b>15.24</b>
	<b>Moderate</b>	<b>7.57</b>	<b>7.38</b>	<b>6.46</b>
	<b>Severe</b>	<b>8.84</b>	<b>9.20</b>	<b>8.77</b>



# Trends in total Life Expectancy, Disability Free Life Expectancy and Life Expectancy with Disability at birth between 1997-2004, Belgium



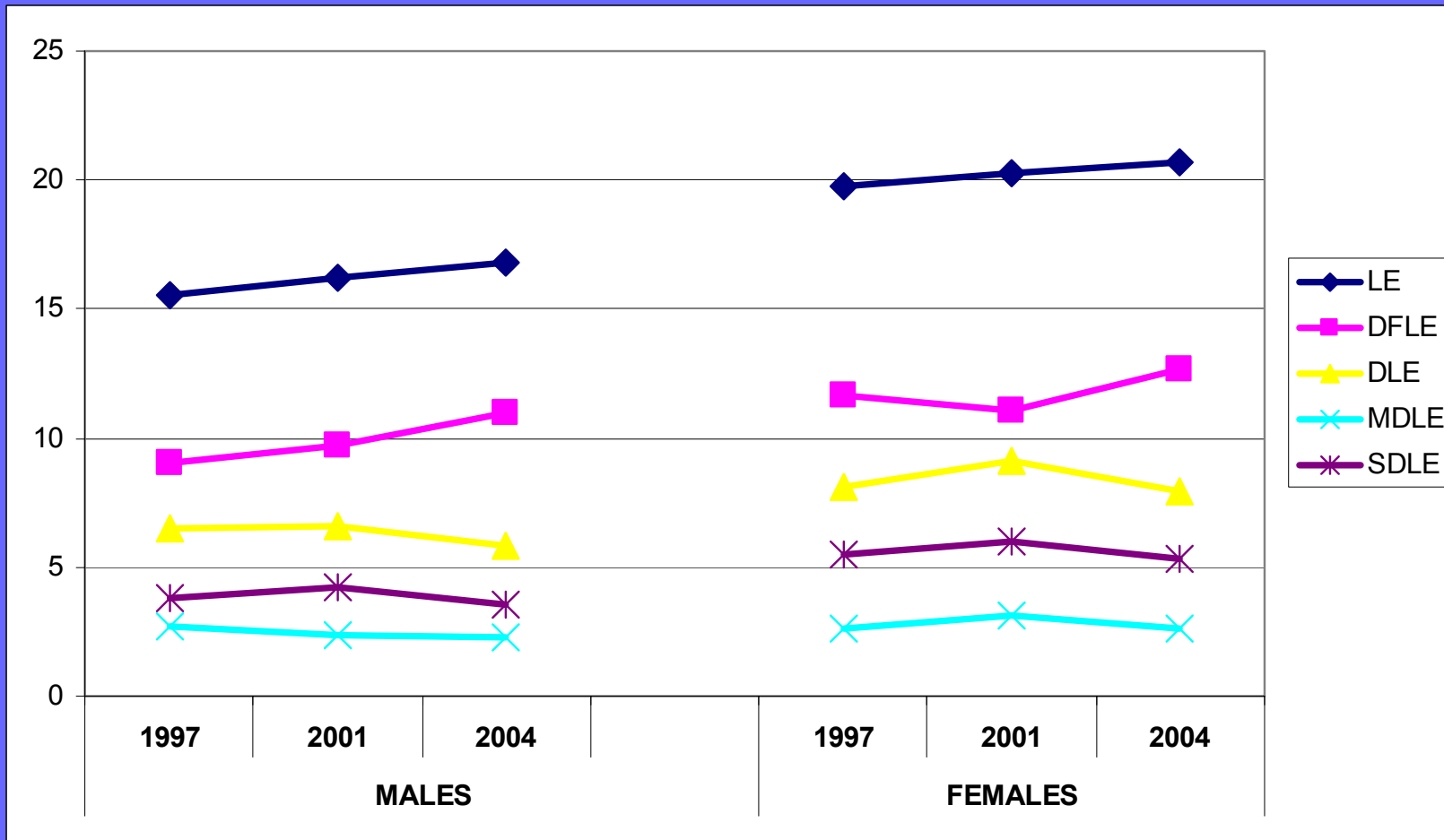


# Total Life Expectancy, Disability Free Life Expectancy and Life Expectancy with Disability at age 65, Belgium, 1997-2004

<b>MALES</b>	<b>Total Life Expectancy</b>	<b>15.53</b>	<b>16.24</b>	<b>16.79</b>
	<b>DFLE</b>	<b>9.00</b>	<b>9.69</b>	<b>10.96</b>
	<b>With Disability</b>	<b>6.53</b>	<b>6.55</b>	<b>5.83</b>
	<b>Moderate</b>	<b>2.69</b>	<b>2.33</b>	<b>2.25</b>
	<b>Severe</b>	<b>3.84</b>	<b>4.22</b>	<b>3.58</b>
<b>FEMALES</b>	<b>Total Life Expectancy</b>	<b>19.8</b>	<b>20.23</b>	<b>20.66</b>
	<b>DFLE</b>	<b>11.70</b>	<b>11.07</b>	<b>12.71</b>
	<b>With Disability</b>	<b>8.10</b>	<b>9.16</b>	<b>7.95</b>
	<b>Moderate</b>	<b>2.60</b>	<b>3.14</b>	<b>2.62</b>
	<b>Severe</b>	<b>5.50</b>	<b>6.02</b>	<b>5.33</b>



# Trends in total Life Expectancy, Disability Free Life Expectancy and Life Expectancy with Disability at age 65 between 1997-2004, Belgium



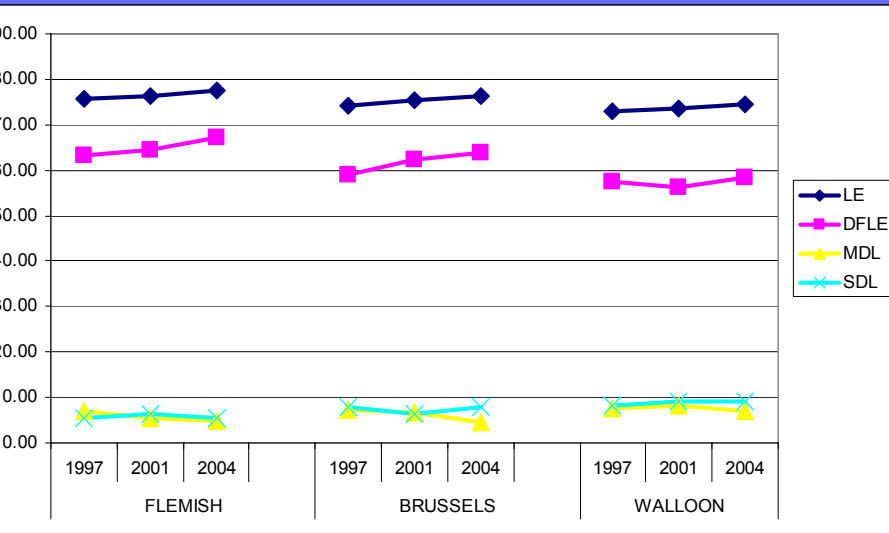
**Disability free life expectancy (DFLE) and life expectancy with moderate (MDLE) and severe (SDLE) disability as proportion of the total life expectancy at ages 0 and 65 , 1997-2004, Belgium**

		<b>MALES</b>			<b>FEMALES</b>		
		<b>1997</b>	<b>2001</b>	<b>2004</b>	<b>1997</b>	<b>2001</b>	<b>2004</b>
<b>AGE 0</b>	<b>DFLE</b>	<b>81.28</b>	<b>81.73</b>	<b>83.73</b>	<b>79.75</b>	<b>79.70</b>	<b>81.50</b>
	<b>DLE</b>	<b>18.72</b>	<b>18.27</b>	<b>16.27</b>	<b>20.25</b>	<b>20.30</b>	<b>18.50</b>
	<b>MDLE</b>	<b>9.75</b>	<b>8.74</b>	<b>7.37</b>	<b>9.34</b>	<b>9.04</b>	<b>7.85</b>
	<b>SDLE</b>	<b>8.97</b>	<b>9.53</b>	<b>8.90</b>	<b>10.91</b>	<b>11.27</b>	<b>10.65</b>
<b>AGE 65</b>	<b>DFLE</b>	<b>57.98</b>	<b>59.68</b>	<b>65.28</b>	<b>59.08</b>	<b>54.73</b>	<b>61.50</b>
	<b>DLE</b>	<b>42.02</b>	<b>40.32</b>	<b>34.72</b>	<b>40.92</b>	<b>45.27</b>	<b>38.50</b>
	<b>MDLE</b>	<b>17.32</b>	<b>14.33</b>	<b>13.38</b>	<b>13.14</b>	<b>15.53</b>	<b>12.70</b>
	<b>SDLE</b>	<b>24.70</b>	<b>26.00</b>	<b>21.34</b>	<b>27.78</b>	<b>29.74</b>	<b>25.81</b>

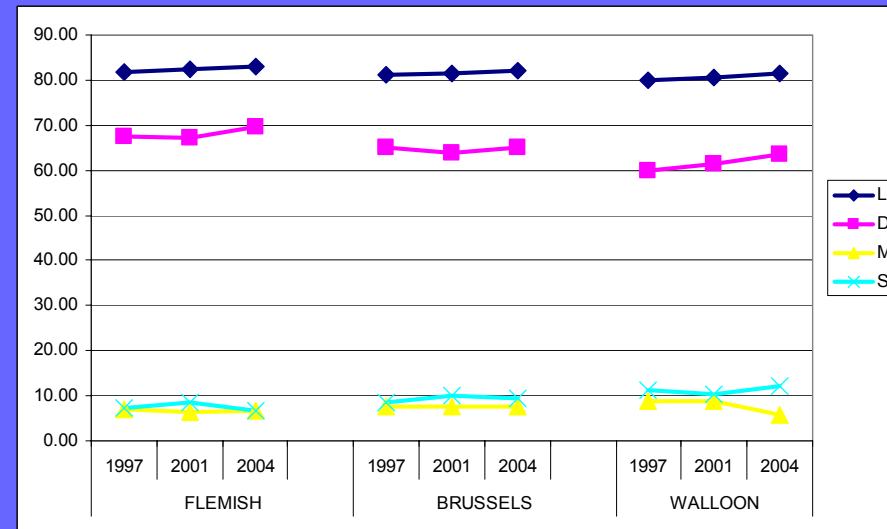
**Gender differences in the trends in life expectancy (LE), disability free life expectancy (DFLE) and life expectancy with moderate (MDLE) and severe (SDLE) disability at ages 0 and 65, 1997-2004, Belgium**

		<b>GENDER DIFFERENCE IN</b>			
		<b>MALES</b>	<b>FEMALES</b>	<b>TREND</b>	<b>P-VALUE</b>
<b>At birth</b>	<b>LE</b>	<b>1.82</b>	<b>1.29</b>	<b>-0.53</b>	<b>0.2618</b>
	<b>DFLE</b>	<b>3.35</b>	<b>2.47</b>	<b>-0.89</b>	<b>0.6365</b>
	<b>MDLE</b>	<b>-1.65</b>	<b>-1.11</b>	<b>0.54</b>	<b>0.4514</b>
	<b>SDLE</b>	<b>0.12</b>	<b>-0.07</b>	<b>-0.18</b>	<b>0.7933</b>
<b>At age 65</b>	<b>LE</b>	<b>1.26</b>	<b>0.86</b>	<b>-0.40</b>	<b>0.0316</b>
	<b>DFLE</b>	<b>1.96</b>	<b>1.01</b>	<b>-0.95</b>	<b>0.5845</b>
	<b>MDLE</b>	<b>-0.44</b>	<b>0.02</b>	<b>0.46</b>	<b>0.5279</b>
	<b>SDLE</b>	<b>-0.25</b>	<b>-0.17</b>	<b>0.08</b>	<b>0.9443</b>

# Trends in life expectancy (LE), disability free life expectancy (DFLE) and life expectancy with moderate (MDLE) and severe (SDLE) disability at age 0 by region, 1997-2004, Belgium

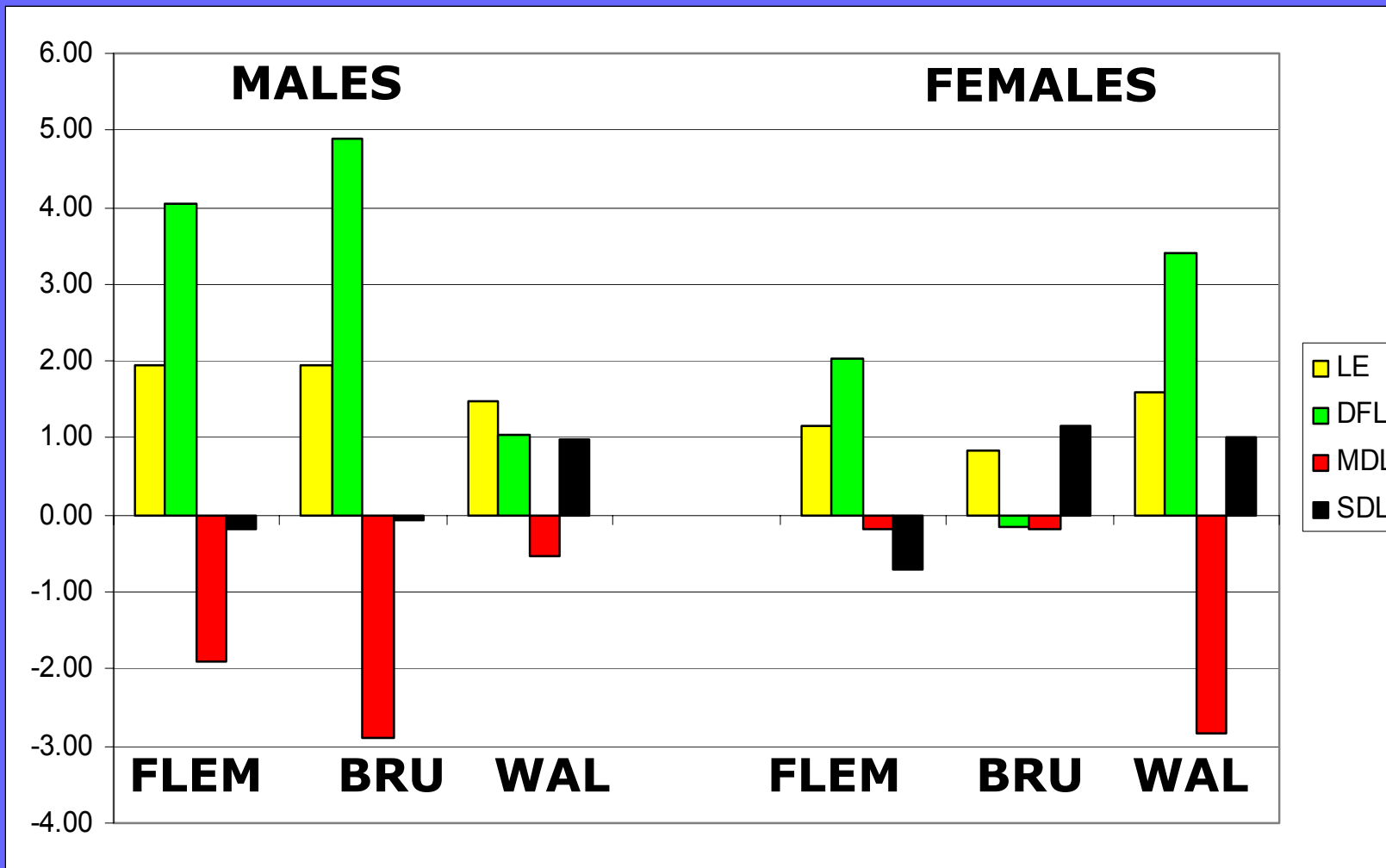


**MALES**

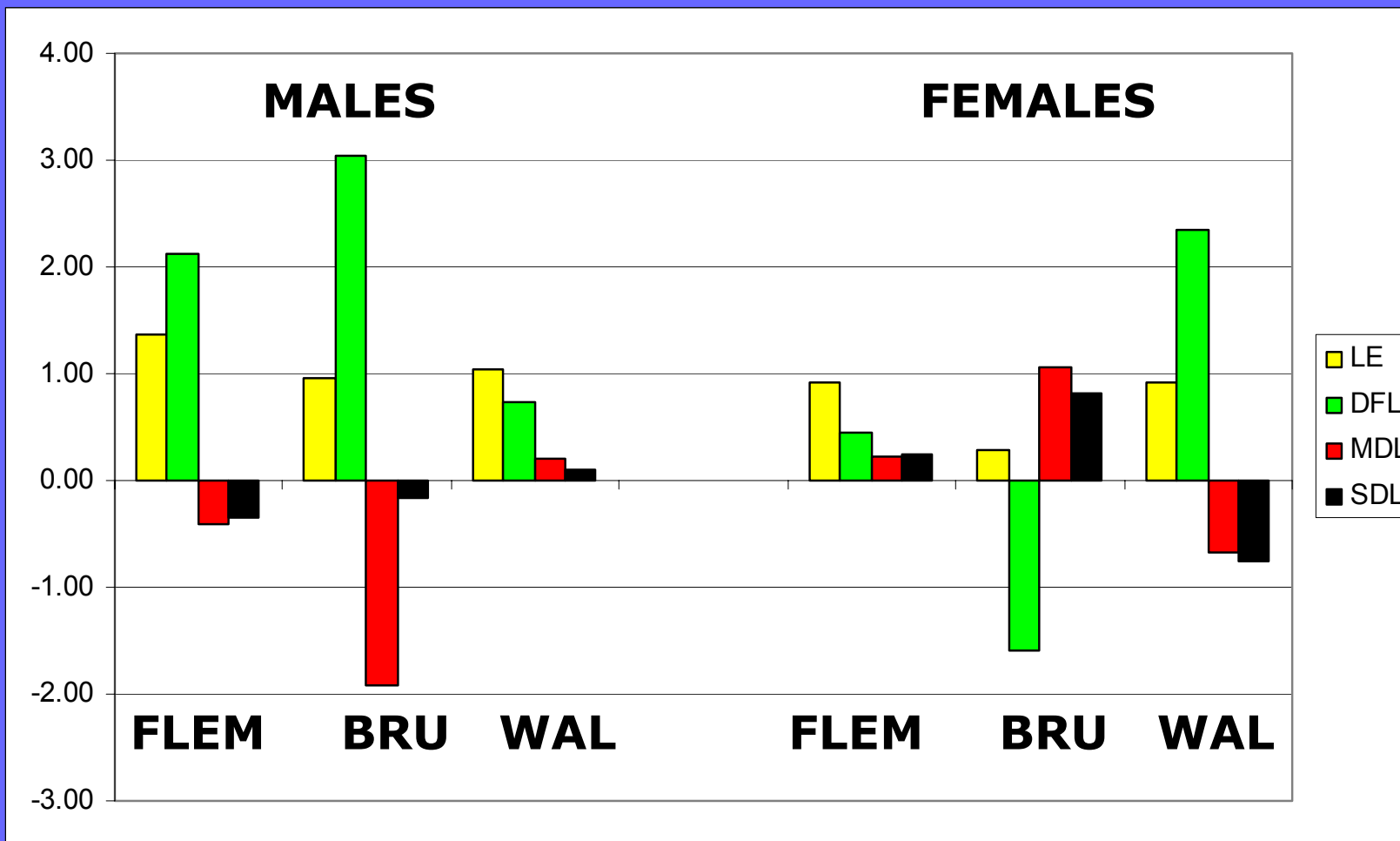


**FEMALES**

# Difference in the trend in life expectancy (LE), disability free life expectancy (DFLE) and life expectancy with moderate (MDLE) and severe (SDLE) disability at age 0 by region, 1997-2004, Belgium



# Difference in the trend in life expectancy (LE), disability free life expectancy (DFLE) and life expectancy with moderate (MDLE) and severe (SDLE) disability at age 65 by region, 1997-2004, Belgium



# CONCLUSION

- ❖ Evidence for compression (**except females at 65 yr (?)**)
  - Longer life
  - Longer disability free life
  - Shorter life with disability, especially moderate disability
  
- ❖ Gain in DFLE is in absolute number of years or expressed as a proportion greater than the gain in life years





# CONCLUSION

## ❖ Gender differences

**Compression stronger in males, but differences not statistical significant**

## ❖ Regional differences

**Males: stronger in Brussels region**

**Females: stronger in Walloon region**

**Only statistical significant at age 65 among males.**





# Prevalence of activity restriction in selected age groups, 1997-2004, Belgium



	DISABILITY								
	NO			MODERATE			SEVERE		
	1997	2001	2004	1997	2001	2004	1997	2001	2004
<b>MALES</b>									
25-29	0.93	0.90	0.93	0.04	0.04	0.05	0.03	0.06	0.03
65-79	0.58	0.71	0.75	0.27	0.08	0.13	0.15	0.21	0.12
<b>FEMALES</b>									
25-29	0.94	0.92	0.90	0.05	0.06	0.07	0.02	0.02	0.03
65-79	0.58	0.70	0.74	0.16	0.12	0.10	0.26	0.19	0.16

