Italian disabled workers' survival: the variables that affect the phenomenon

Laura Baradel INAIL

Daniela Martini INAIL

About the speakers

- **Laura Baradel, Daniela Martini**
- *Actuaries, INAIL*

- We are fully qualified Italian actuaries, currently working at the Statistical and Actuarial Department of INAIL, where we mainly deal with the continuous study of mortality.

- INAIL, *Italian Institute for insurance against accidents at work*, is a non-profit government administration which provides compulsory insurance coverage against accidents at work and occupational diseases.

ISTITUTO NAZIONALE PER L'ASSICURAZIONE
CONTRO GLI INFORTUNI SUL LAVORO

INAIL

Prevention

Economic benefits

Research

Health care

Reintegration to social life and work

Rehabilitation

AGENDA

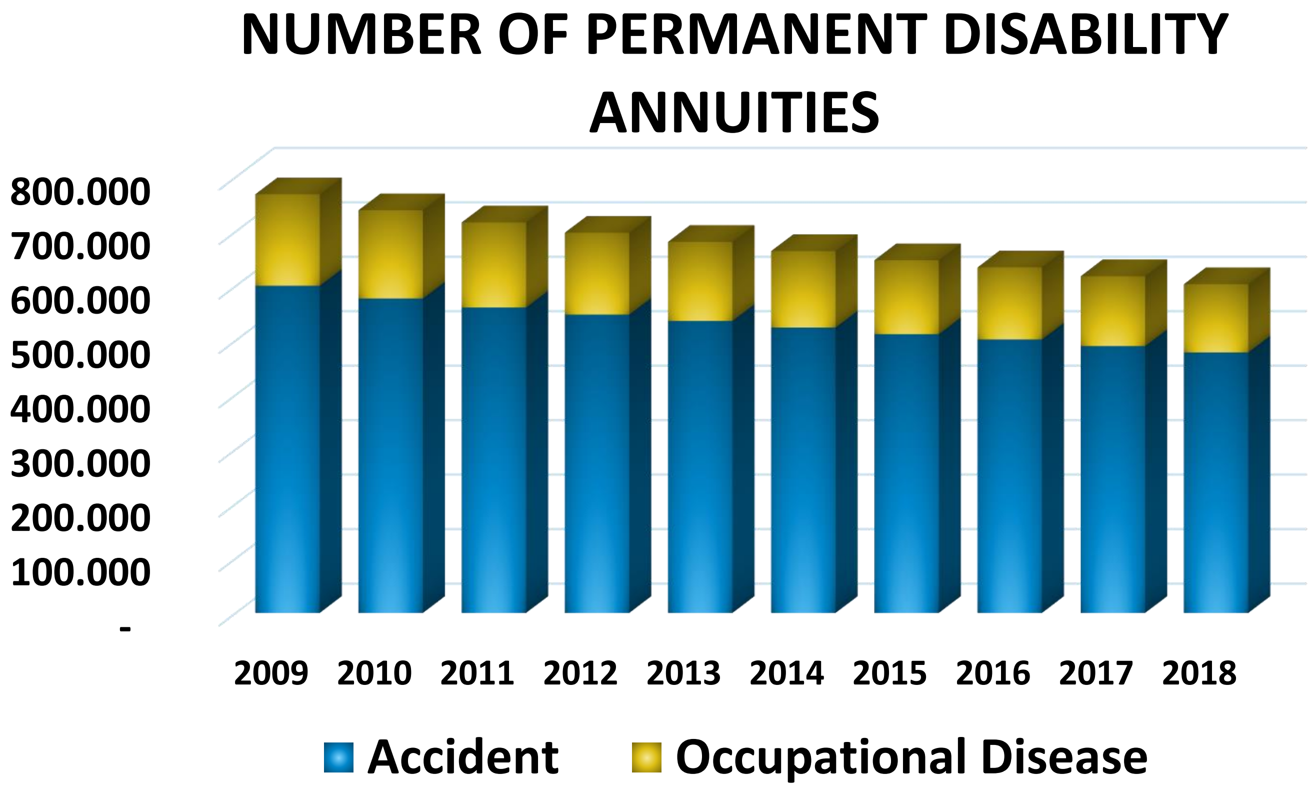
- DISABLED WORKERS' SURVIVAL: the variables that affect the phenomenon
- LIFE TABLES FOR GROUPS OF DISABLED
- DISABLED'S LIFE EXPECTANCY TREND
- DISABLED' MORTALITY: theoretical *vs* observed rates
- DISABLED' MORTALITY: 2018 UPDATE

DISABLED WORKERS' SURVIVAL

This study focuses on **survival of disabled workers** insured by Inail, who suffered an accident at work or contracted an occupational disease and receive a life annuity (*impairment degree over 15%*).

In the next slides, for the sake of simplicity:
ACCIDENT stands for accident at work;
DISEASE stands for occupational disease;
DISABLED: Inail annuitants who suffered an accident at work or contracted an occupational disease.

DISABLED WORKERS' SURVIVAL



Data source: INAIL data base

2018 AVERAGE VALUES

Age: 69 years

Degree: 29%

Claim Duration: 28 years

CLAIM DURATION: years from the starting date of annuity to valuation date

DISABLED WORKERS' SURVIVAL

In a context of general improvement of life expectancy

- ❑ Is disabled' survival increasing?
- ❑ Are disabled homogeneous in term of mortality?
- ❑ Which are the variables that most affect their level of mortality?

DISABLED WORKERS' SURVIVAL

The variables that affect the phenomenon

CLAIM DURATION	HIGH (over 10 years) LOW (up to 10 years)
TYPE OF EVENT	Accident Occupational disease
CLASS OF DEGREE	Up to 60% 61%-100%
AGE	From 12 to 108 years

DISABLED WORKERS' SURVIVAL
The variables that affect the phenomenon

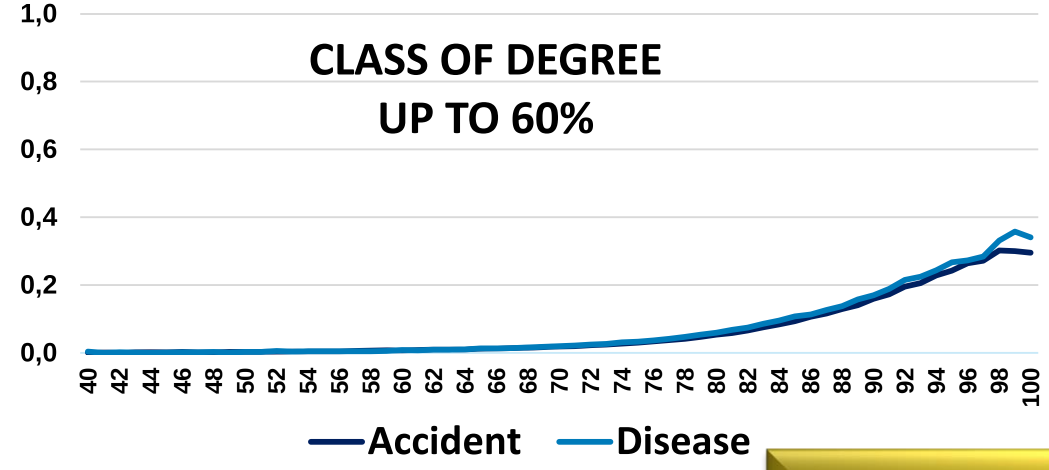
Statistical observation period: **1996-2013**

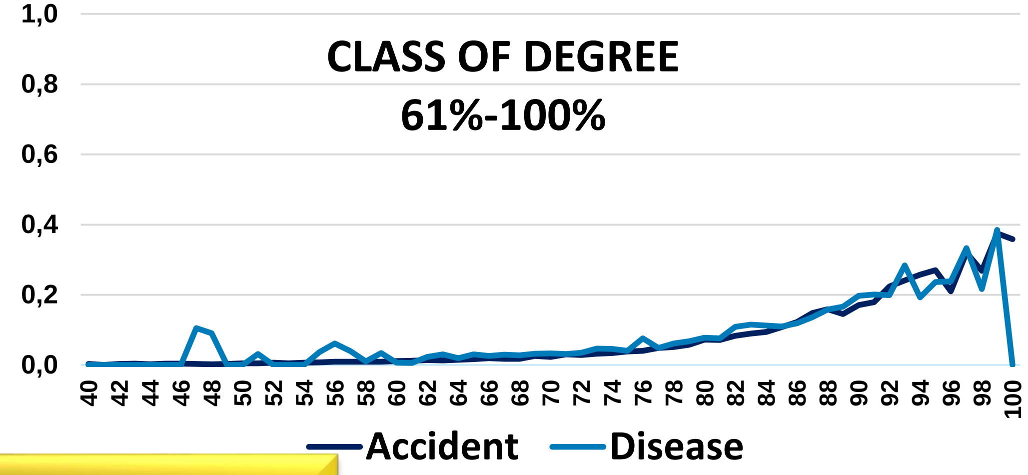
6 different line of mortality

CLAIM DURATION	TYPE OF EVENT	CLASS OF DEGREE
HIGH DURATION ANNUITIES (>10 years)	Accidents and Occupational Diseases	up to 60%
		61%-100%
LOW DURATION ANNUITIES (<=10 years)	Accidents	up to 60%
		61%-100%
	Occupational Diseases	up to 60%
		61%-100%

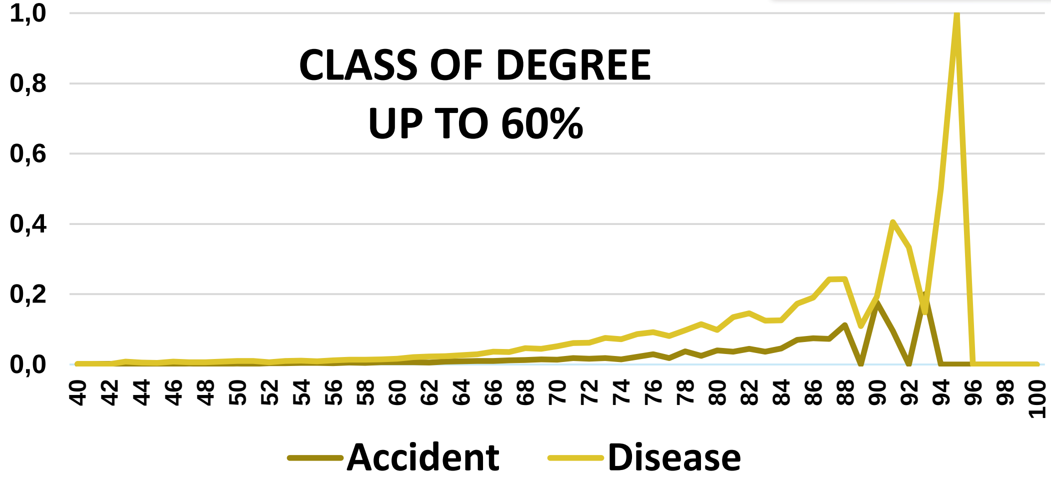
LIFE TABLES FOR GROUPS OF DISABLED

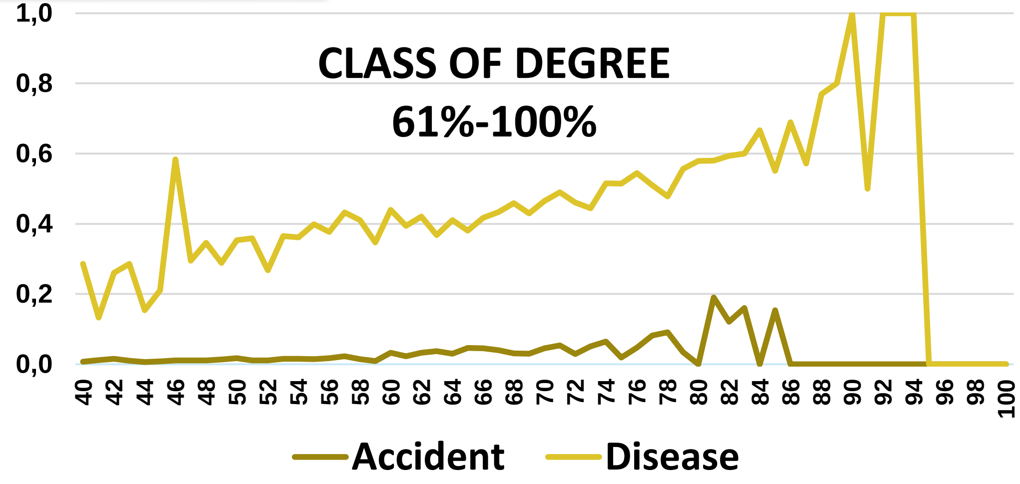
HIGH CLAIM DURATION



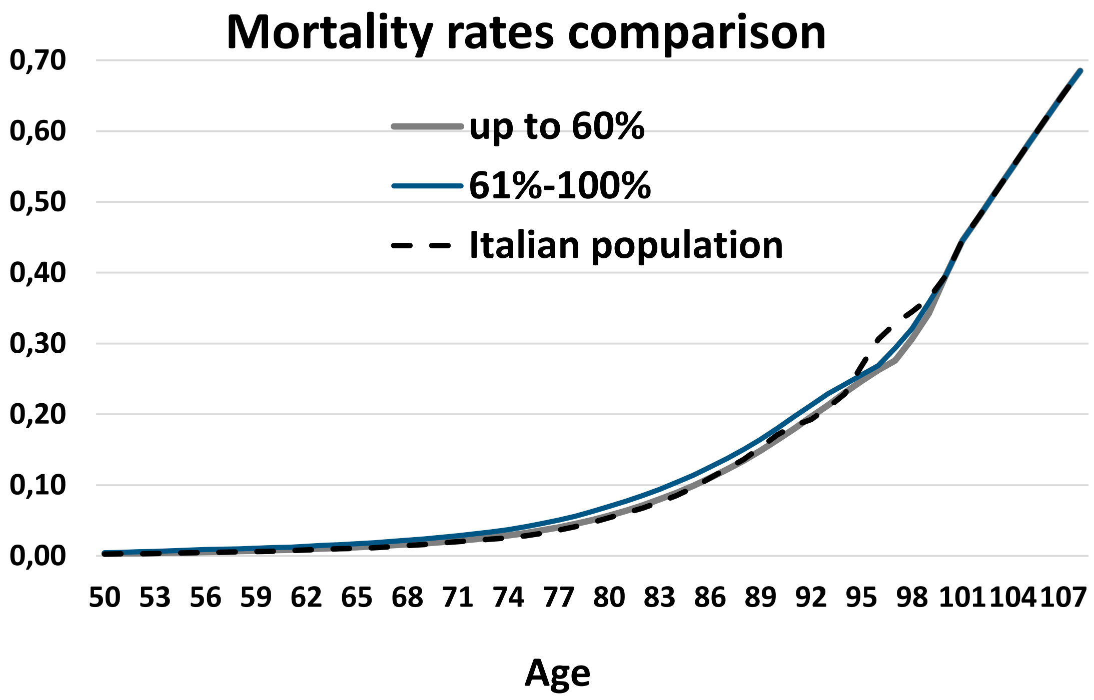


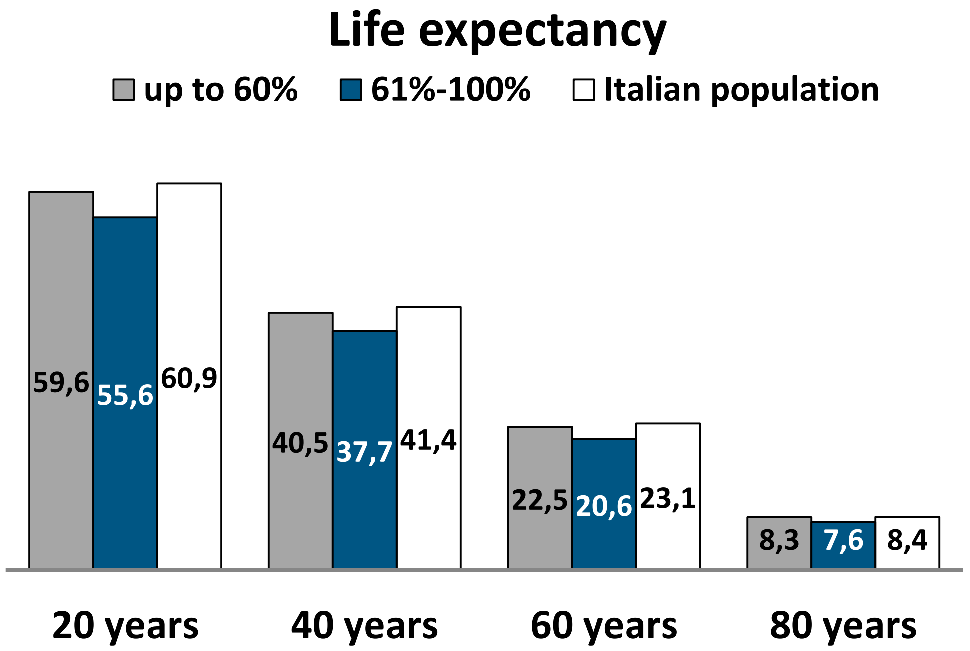
LOW CLAIM DURATION



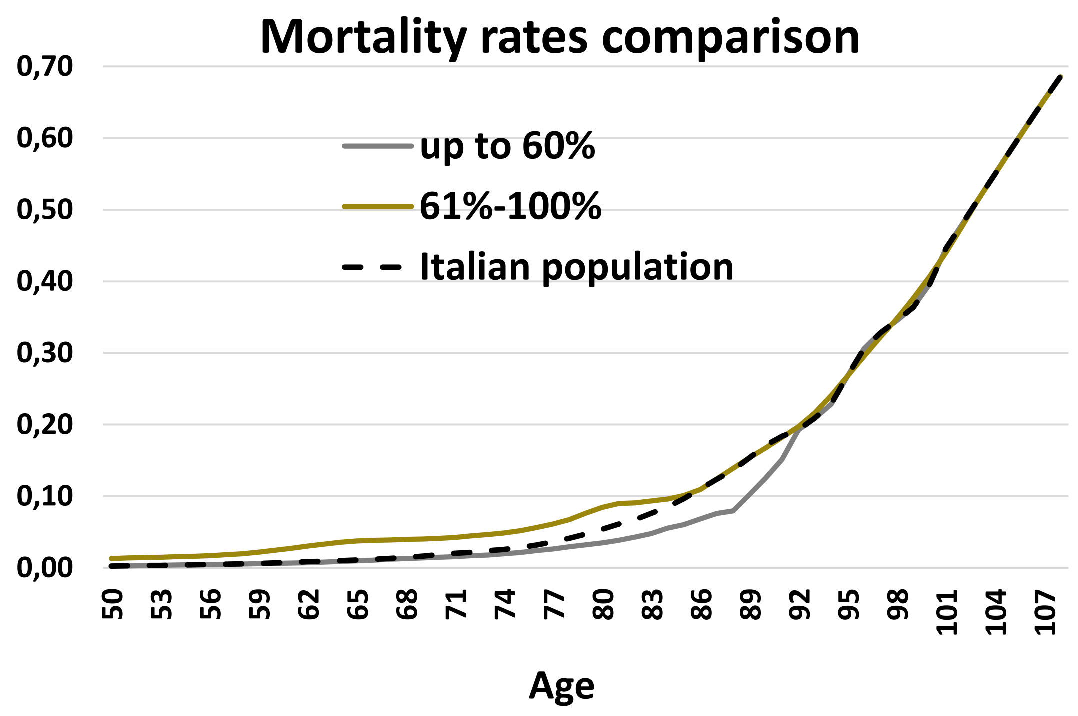


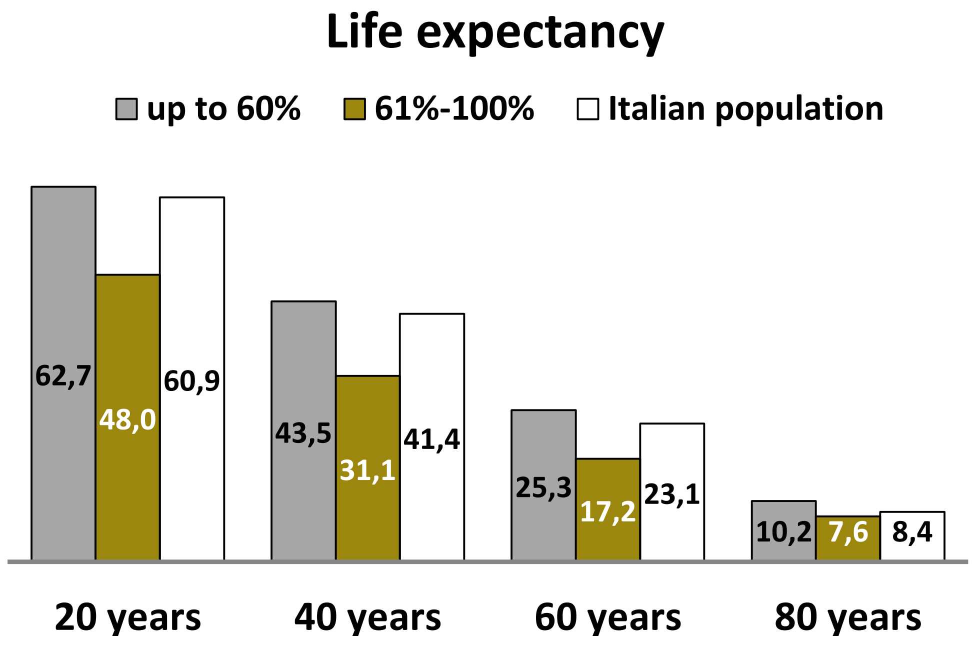
LIFE TABLES FOR GROUPS OF DISABLED:
High claim duration



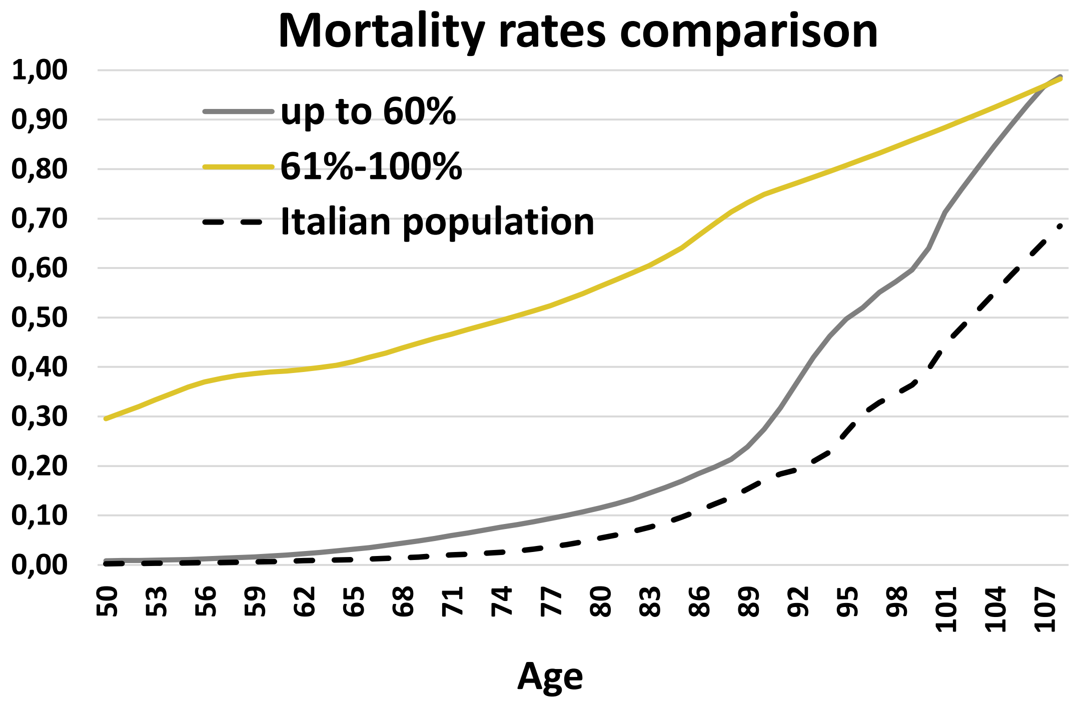


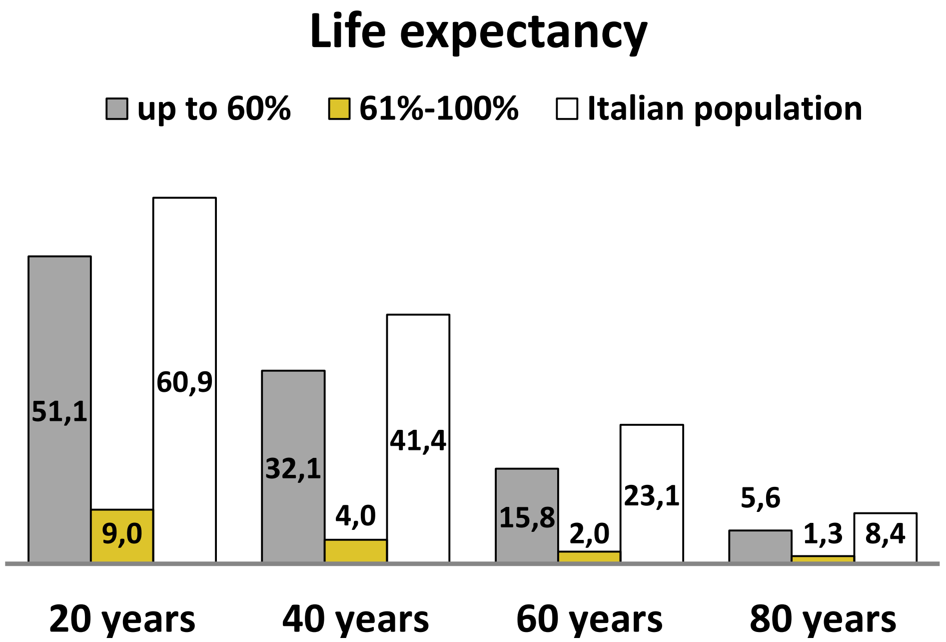
INAIL LIFE TABLES FOR GROUPS OF DISABLED:
Low claim duration - Accident





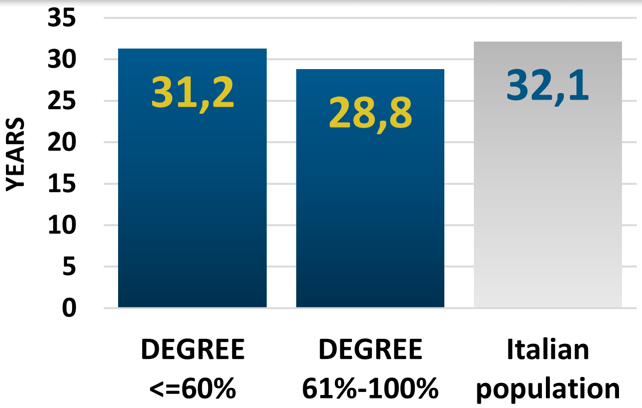
LIFE TABLES FOR GROUPS OF DISABLED:
Low claim duration – Disease



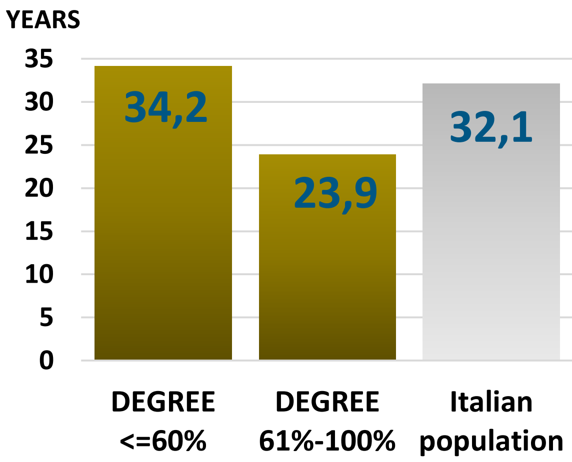


LIFE TABLES FOR GROUPS OF DISABLED:
Life expectancy at 50 years

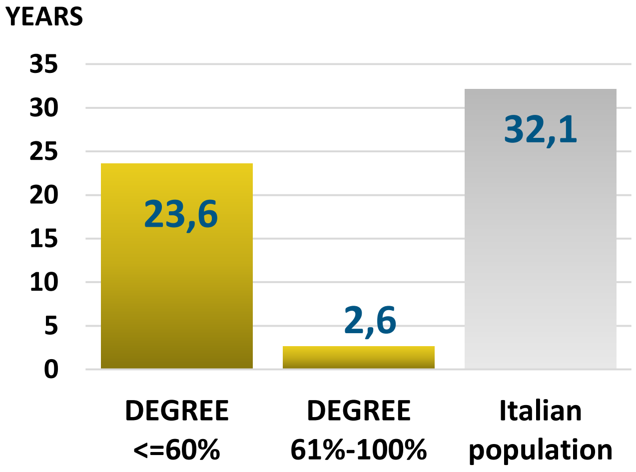
HIGH CLAIM DURATION



LOW CLAIM DURATION - INJURED



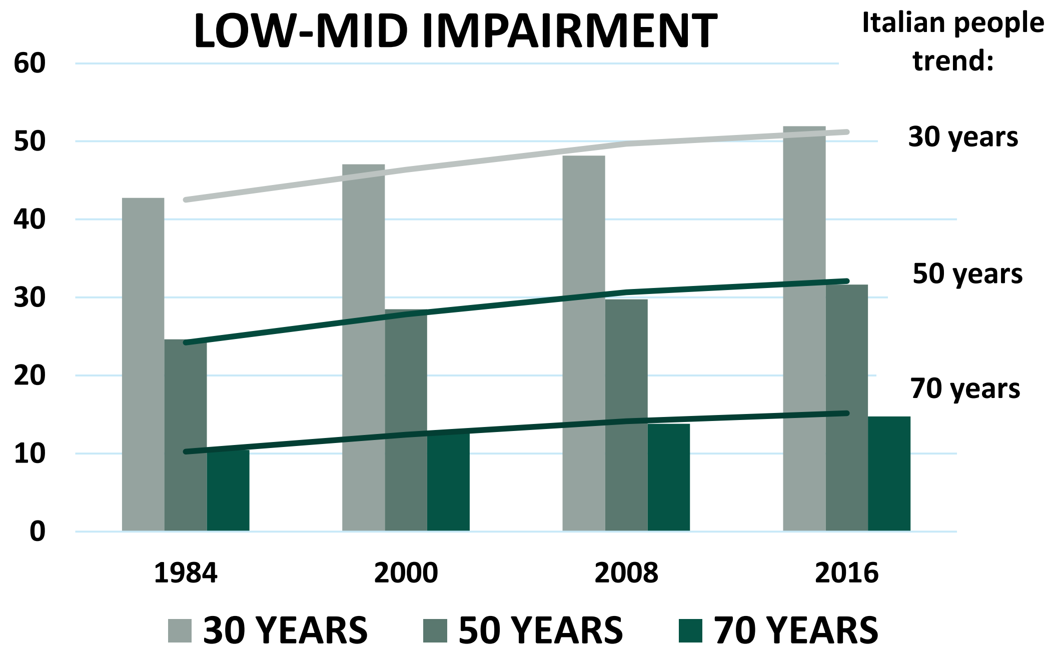
LOW CLAIM DURATION - DISEASED

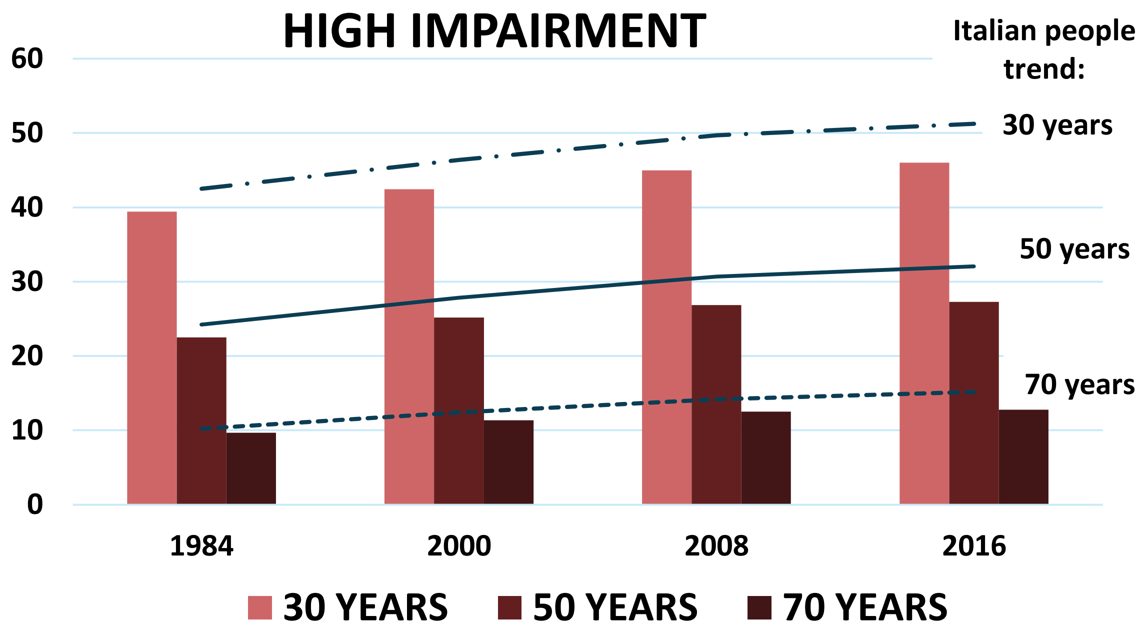


DISABLED'S LIFE EXPECTANCY TREND

LIFE TABLES	1984	2000	2008	2016
PERIOD OF APPLICATION	1984-1999	2000-2007	2008-2015	**2016 on**
PERIOD OF OBSERVATION	1972-1976	1990-1995	1996-2004	**1996-2013**
VARIABLES CONSIDERED:				
• Age	yes	yes	yes	**yes**
• Impairment degree	yes	yes	yes	**yes**
• Mortality projection	no	no	yes	**yes**
• Claim duration	no	no	no	**yes**
• Type of event	no	no	no	**yes**

DISABLED'S LIFE EXPECTANCY TREND



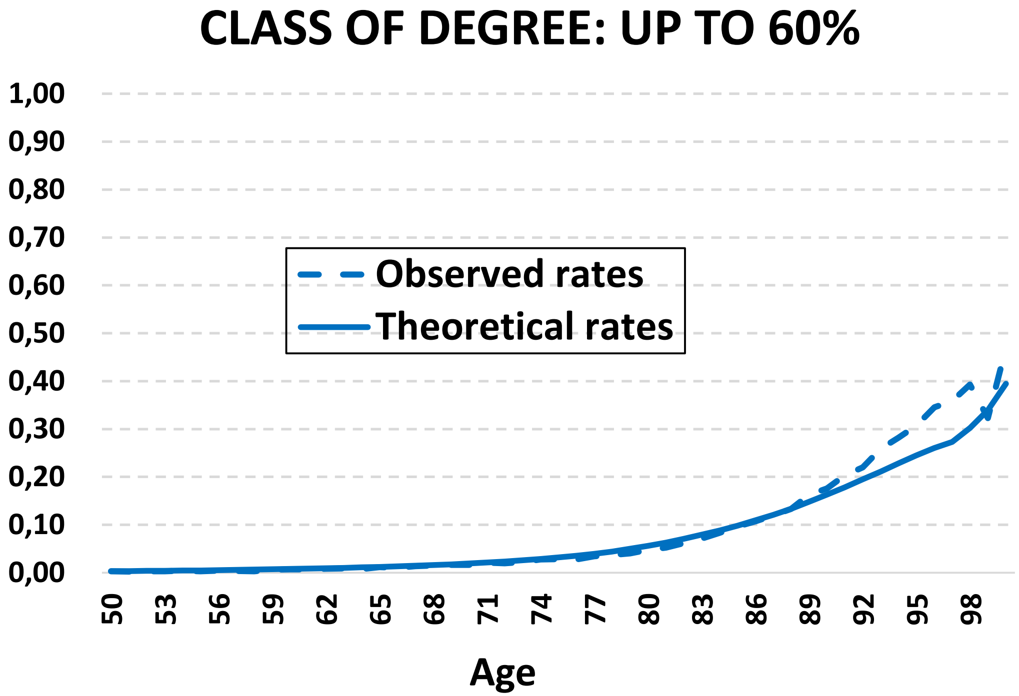


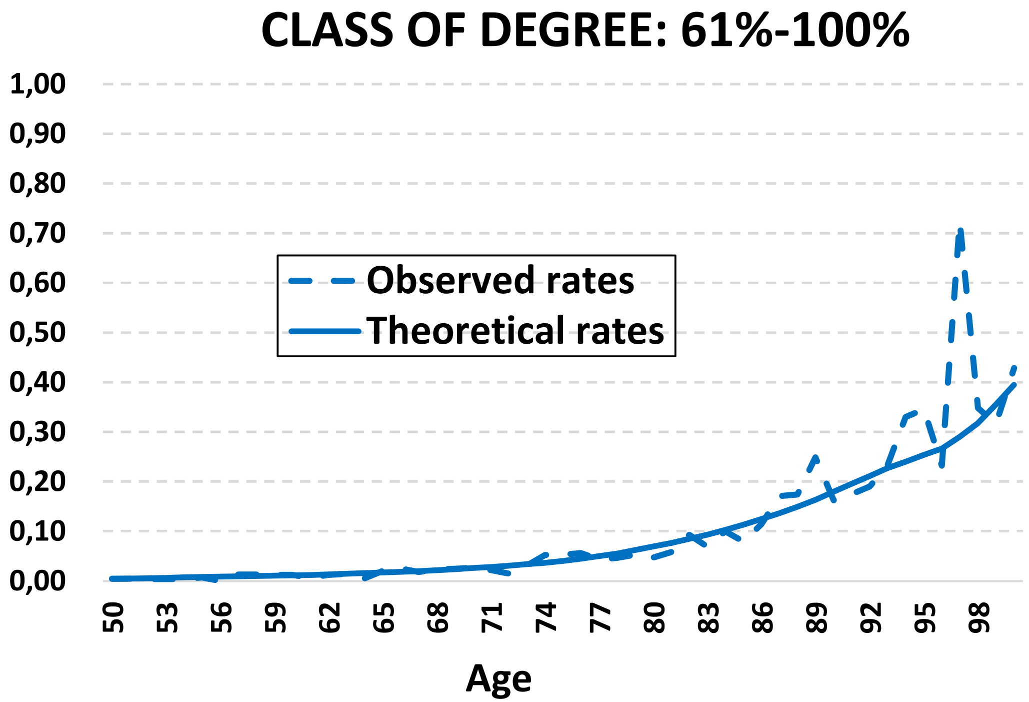
LIFE EXPECTANCY'S IMPROVEMENT 1984-2016

AGE	DISABLED		ITALIAN POPULATION
	Low-mid impairment	High impairment	
30	21,5%	16,7%	20,5%
50	28,4%	21,2%	32,3%
70	41,3%	32,1%	48,2%

DISABLED' MORTALITY
Theoretical *vs* observed rates

HIGH CLAIM DURATION

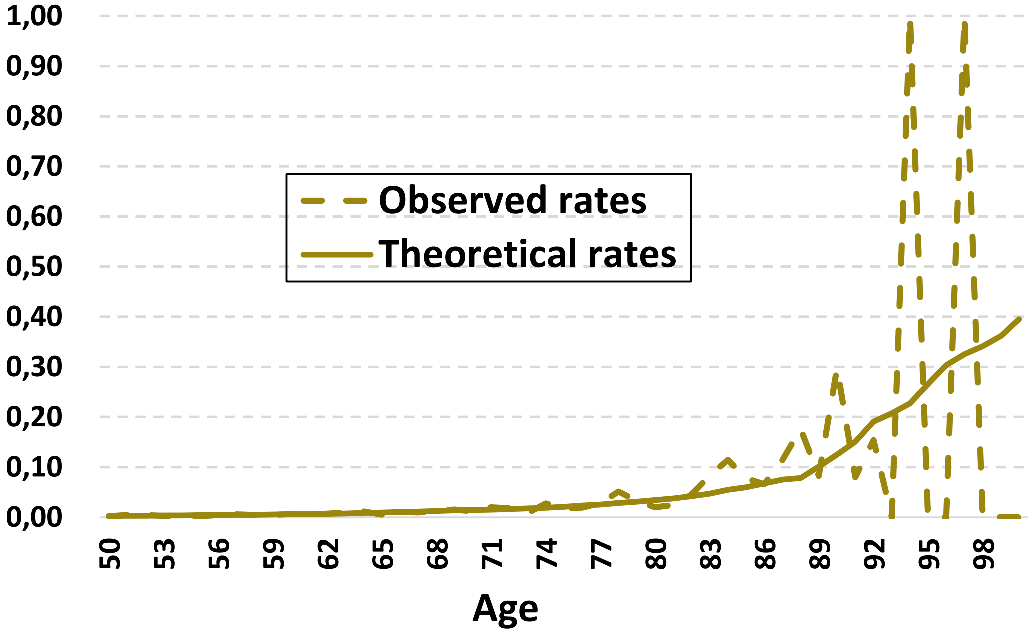




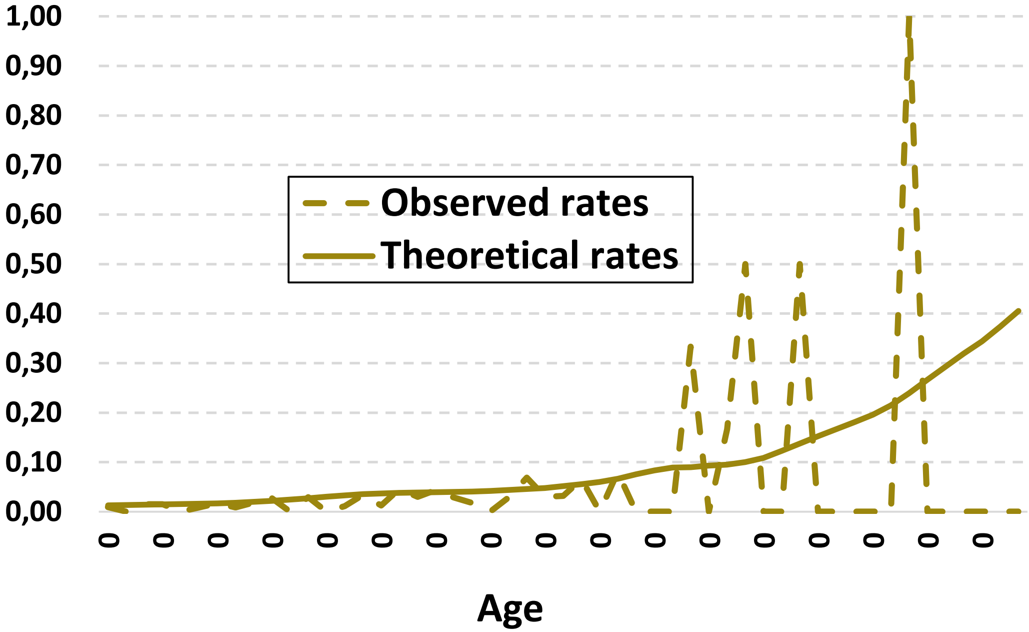
DISABLED' MORTALITY
Theoretical *vs* observed rates

LOW CLAIM DURATION - ACCIDENT

CLASS OF DEGREE: UP TO 60%

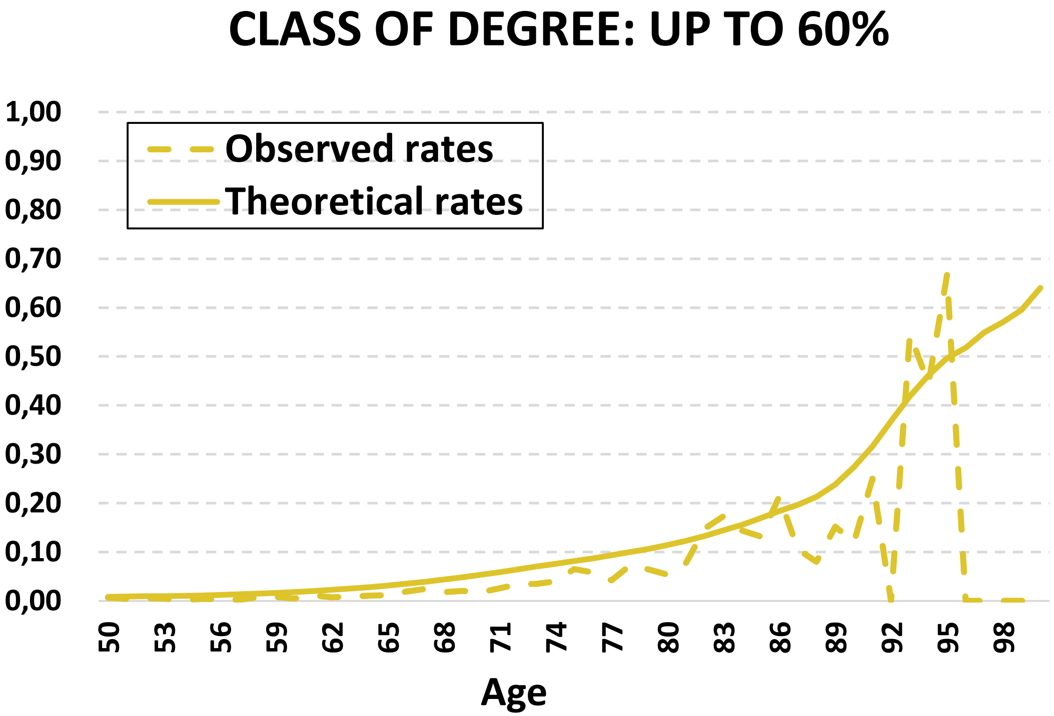


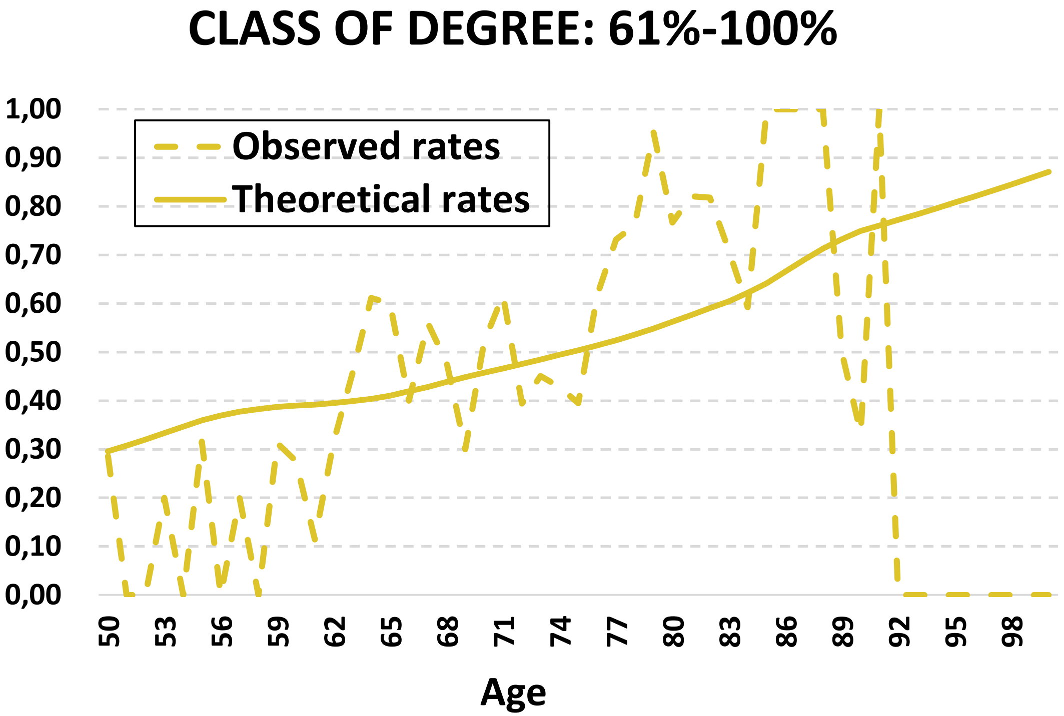
CLASS OF DEGREE: 61%-100%



DISABLED' MORTALITY
Theoretical *vs* observed rates

LOW CLAIM DURATION - DISEASE

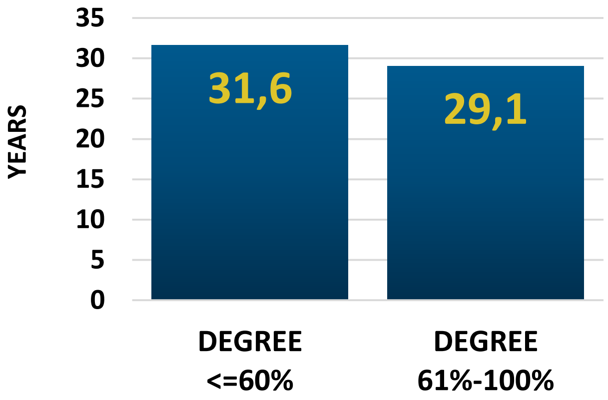




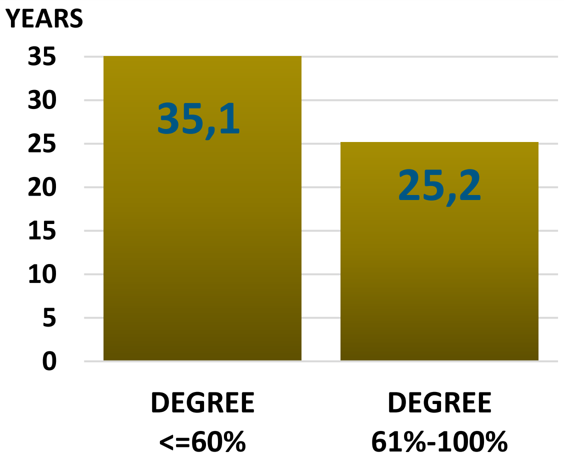
DISABLED’ MORTALITY: 2018 UPDATE

Life expectancy at 50 years

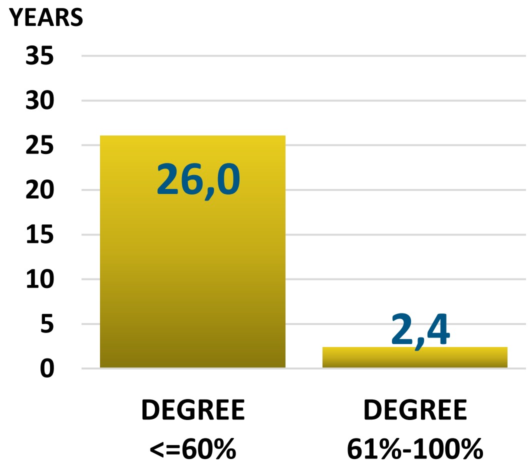
HIGH CLAIM DURATION



LOW CLAIM DURATION - INJURED



LOW CLAIM DURATION - DISEASED



DISABLED’ MORTALITY: 2018 UPDATE

Life expectancy at 50 years: 2013 *vs* 2018

HIGH CLAIM DURATION

DEGREE <= 60%	+ 0,4 YEARS
DEGREE > 60%	+ 0,3 YEARS

LOW CLAIM DURATION - INJURED

DEGREE <= 60%	+ 0,9 YEARS
DEGREE > 60%	+ 1,2 YEARS

LOW CLAIM DURATION - DISEASED

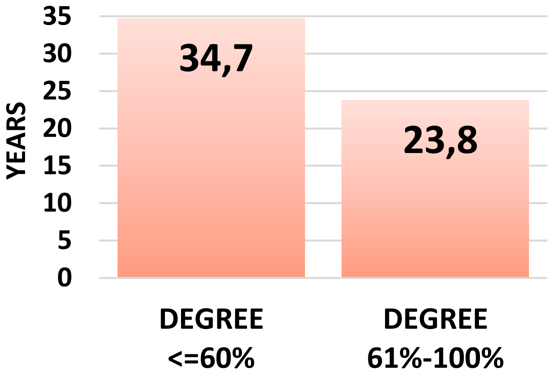
DEGREE <= 60%	+ 2,4 YEARS
DEGREE > 60%	- 0,2 YEARS

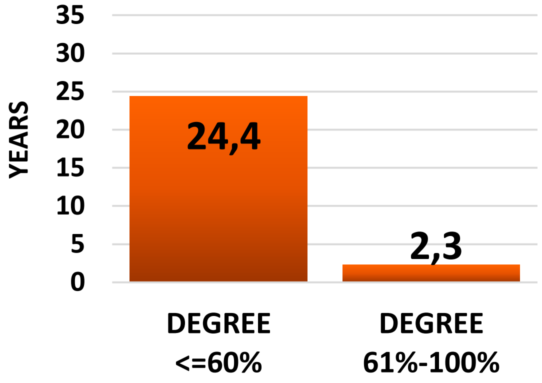
DISABLED' MORTALITY: 2018 UPDATE

Life expectancy at 50 years

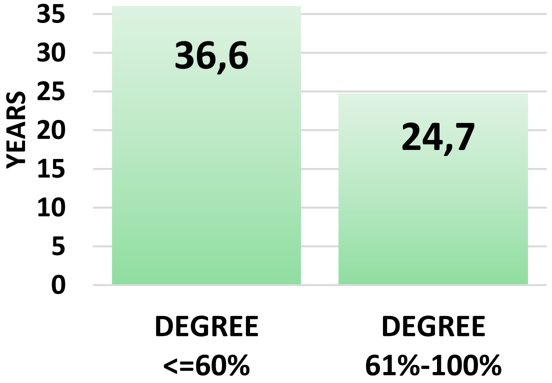
	INJURED	DISEASED

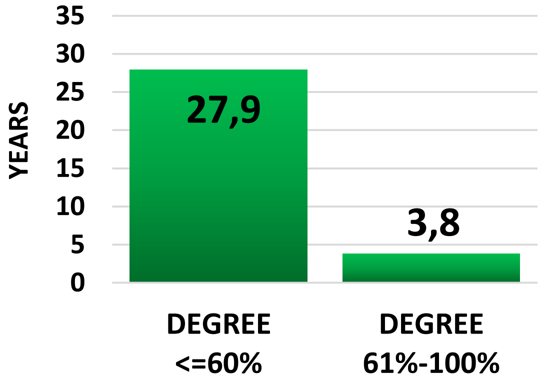
WORKER





EMPLOYEE





Thank you very much for your attention!

Contact details:

	Laura Baradel	Daniela Martini
address:	Viale Stefano Gradi, 55 00143 Roma Italia	Viale Stefano Gradi, 55 00143 Roma Italia
phone:	+39 06 54872303	+39 06 54872334
mail:	l.baradel@inail.it	d.martini@inail.it
web:	www.inail.it	www.inail.it