



# The transition of medical students to the residency training: the effects on physical activity and mental health.

## Working team

**INEFC Barcelona:** Dra.Alba Pardo (speaker)

**Galatea Foundation Team:** Anna Mitjans , Antoni Arteman, Lucía Baranda, Manel Salamero

**Leeds University:** Dr. James McKenna

**EAPH Conference 2015: Barcelona, 20-21 April**

# What's Galatea Foundation?

- Created by the Catalan Medical Association in 2001 in accordance with the autonomous government of Catalonia.
- Devoted to enhancing the health and the wellbeing of doctors and other health professionals.
- Integral care programmes for health professionals (doctors, nurses, veterinarians and pharmacists).
- Framework to manage programmes for health care and prevention addressed to professionals.

# Methodology (1)

Longitudinal Study on Junior Doctors Health in Catalonia (2013-2017) (Mitjans, 2014)

**Population:** 420 Students ( 52% of enrolled students )  
478 Initial Residents  
290 Residents

## Self-administered survey

---

2010

Students

Self-administered

2013 (May to June)

Initial Residents

On line

2014 (May to June)

1<sup>st</sup> year Residents

\*Telephone monitoring

•Response rate: 60.7% 290 residents

# Methodology (2)

## Survey: based on the Catalan Health Survey

Health variables

Mental health: GHQ-12

Lifestyle behaviours:

Smoking, alcohol consumption, substances use, sleep pattern...

### PA level (IPAQ-short version)

**Active: complying with current PA guidelines**

+150min/week Moderate intensity PA (MPA) or

+ 75min/week Vigorous intensity PA (VPA)

**Highly active**

+300min/week MPA or

+ 150min/week VPA

**Under-exercisers**

Not meet the minimum recommended PA for health

# Sociodemographic characteristics (1)

## Feminized degree

75% women in students

68% women in residents

Distribution of the sample of students and residents by gender and age



**4th grade, 22y**



**26-27y**

# Sociodemographic characteristics (2)

## Residents Patient-care specialties

### Medical specialties:

**30% Family Medicine**

9% Pediatricians

6% Internal Medicine

6% Gynecology

49% others

66% from Spain (50% from Catalonia)

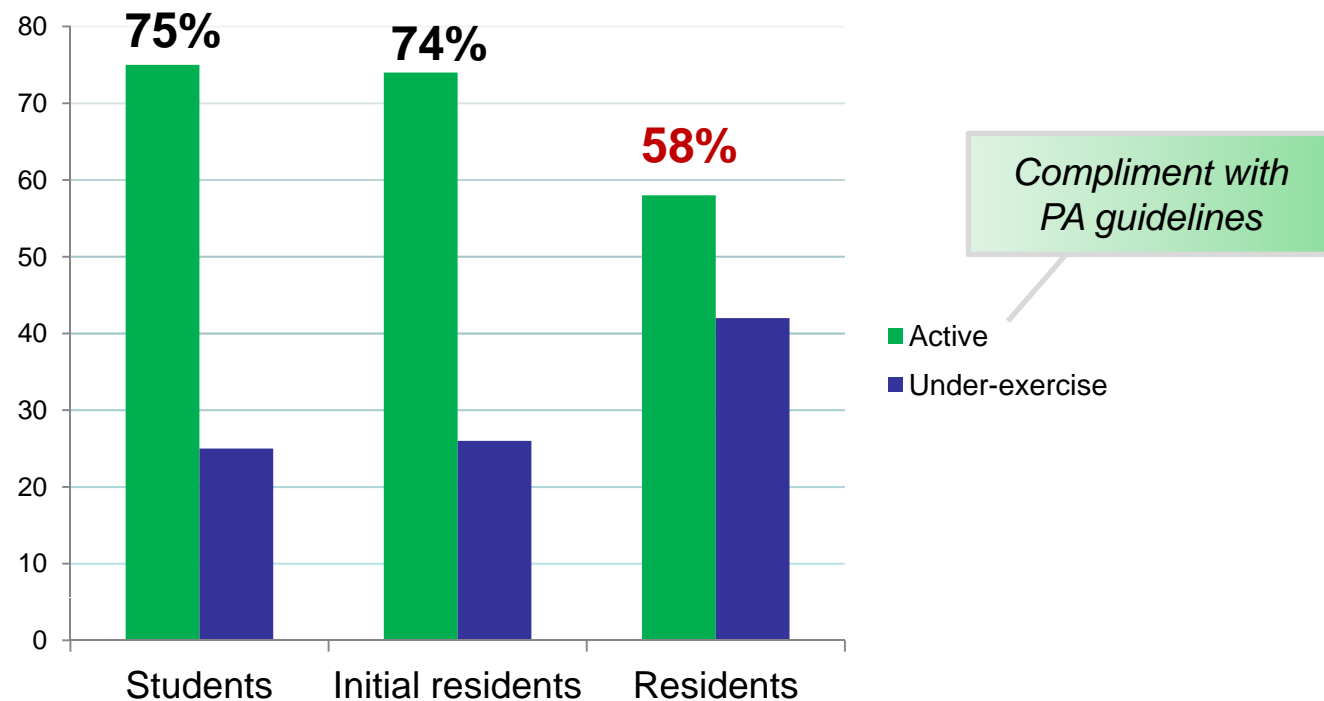
34% from other countries (South America)

# Physical activity level

# PA level (1)

## High compliment with current PA guidelines before Residency

Physical activity performed the last 7 days by IPAQ



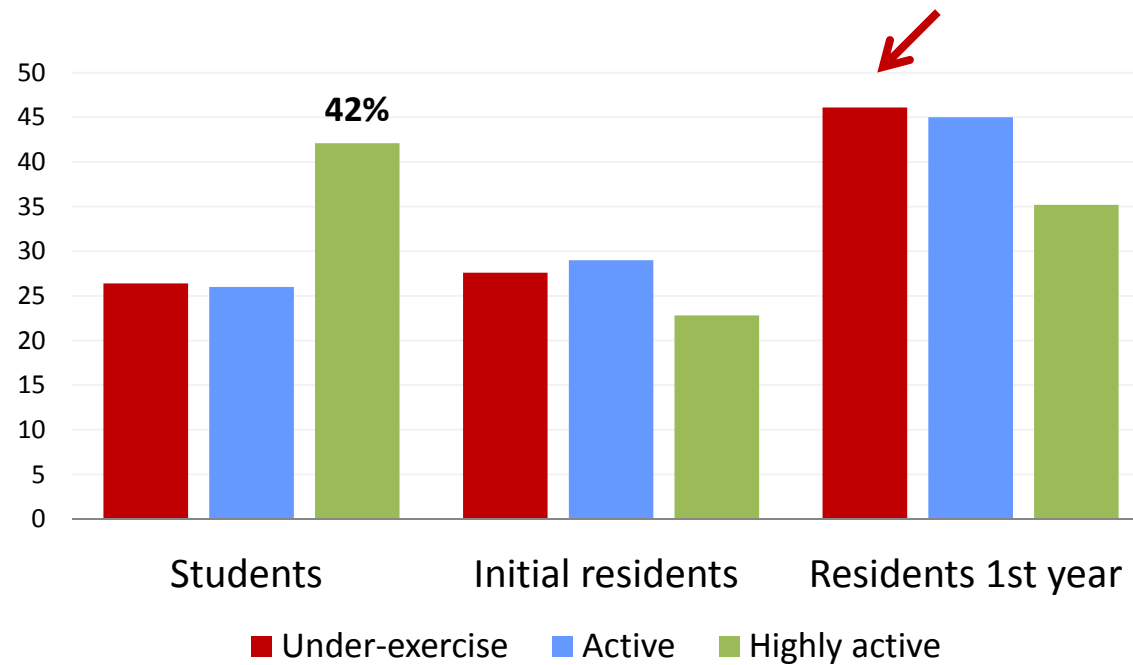


# PA level (2)

## High level of PA in students

Under-exercise increase after the 1<sup>st</sup> year of residency

Physical activity performed the last 7 days by IPAQ



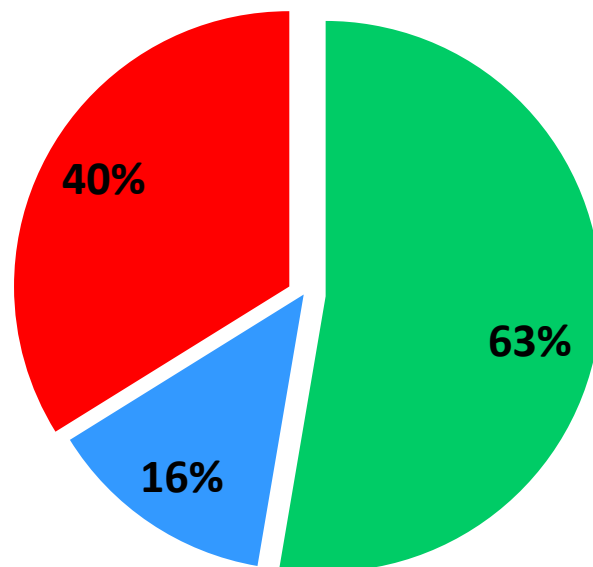
## PA level (3)

Which type of PA they engaged in?

Walking

VPA

Physical activity performed the last 7 days by IPAQ



- Walking (+150min/week)
- MPA (+150min/week)
- VPA (+75min/week)

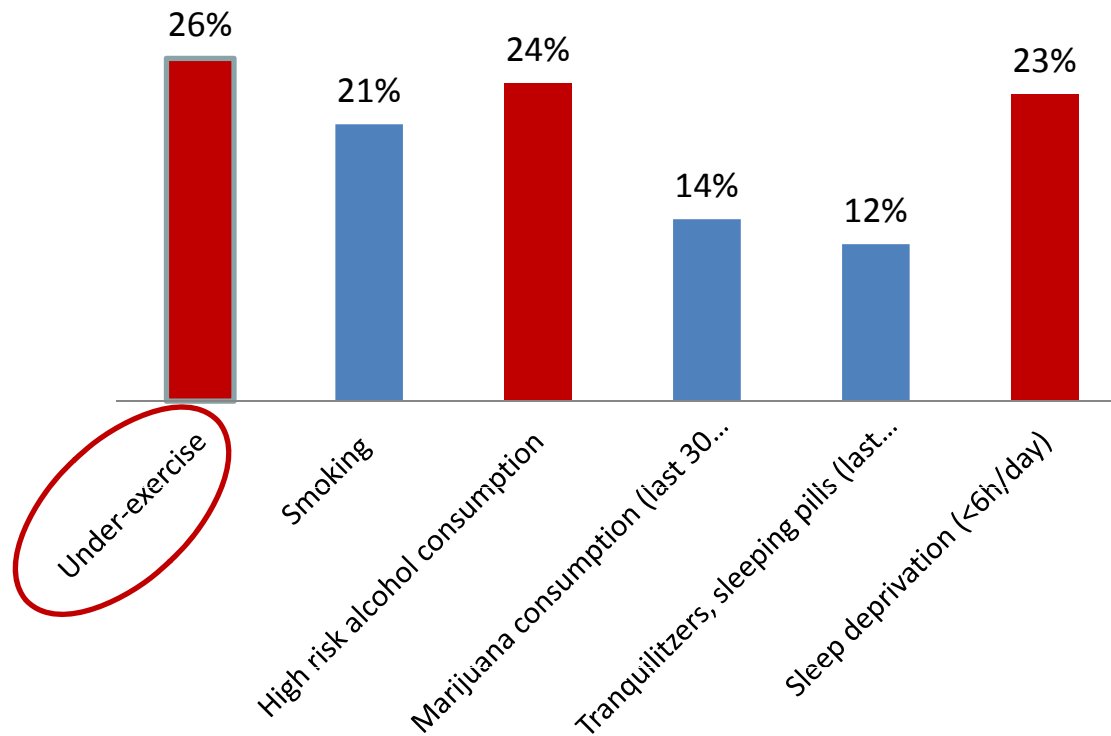


# Lifestyles behaviours determining health

# LIFESTYLE BEHAVIOURS: STUDENTS

↑ Under-exercise ↑ alcohol consumption  
↑ sleep deprivation

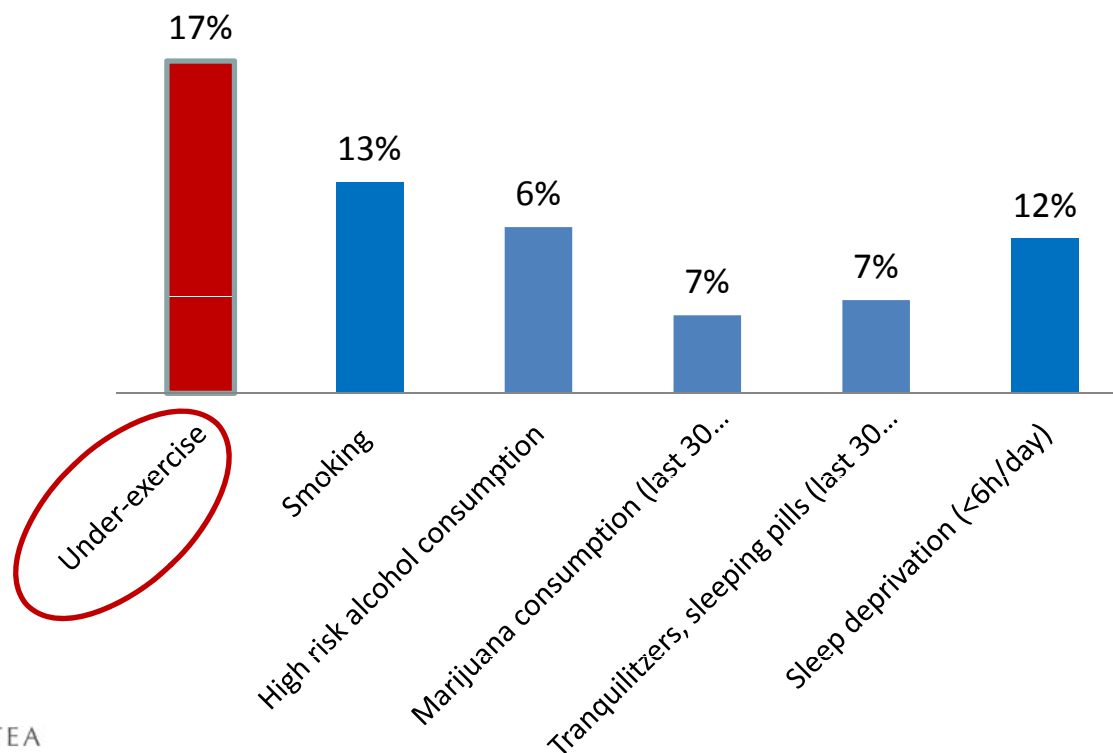
## STUDENTS



# LIFESTYLE BEHAVIOURS: INITIAL RESIDENTS

The most prevalent unhealthy behaviours  
Under-exercise

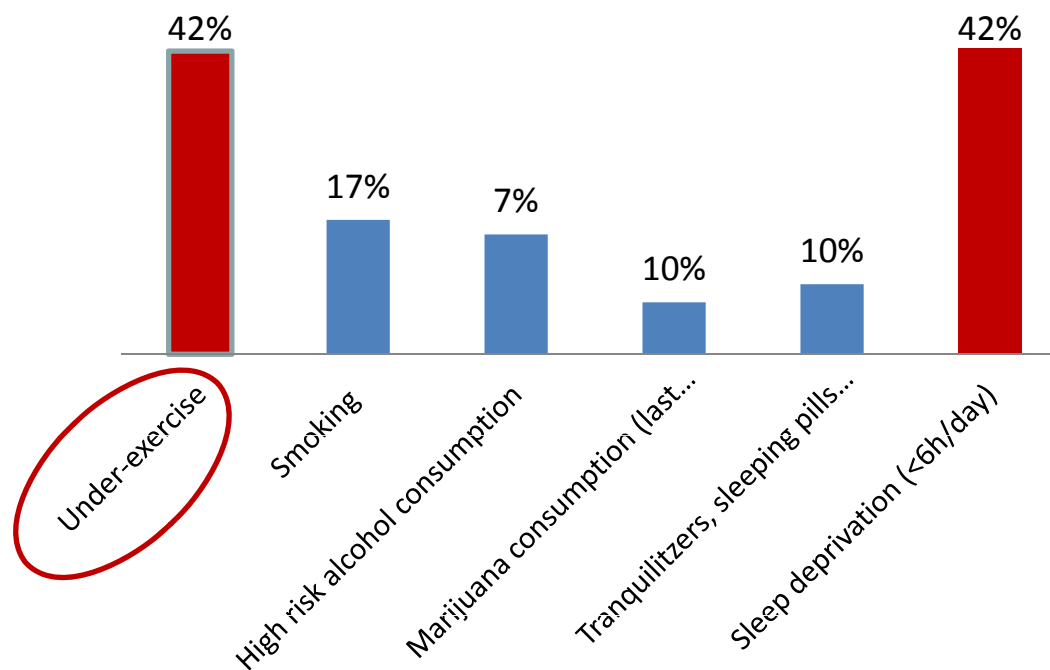
## INITIAL RESIDENTS



# LIFESTYLE BEHAVIOURS: RESIDENTS 1<sup>st</sup> year

The most prevalent unhealthy behaviour:  
Under-exercise and Sleep deprivation

## RESIDENTS 1<sup>st</sup> year



# Health status

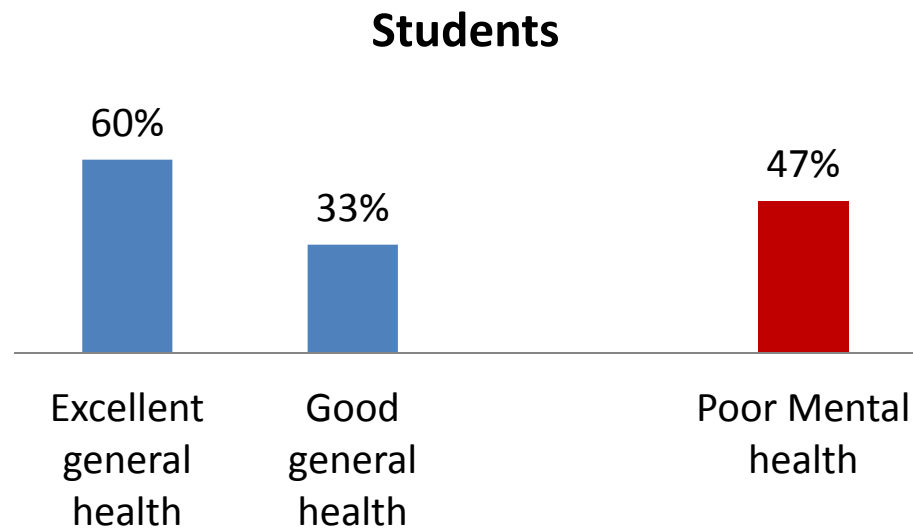
The medical training showed differences in the health status of doctors

Higher risk of poor mental health and stress (especially in students and residents 1<sup>st</sup> year) but good self-perceived health

# HEALTH: STUDENTS

## Almost half of students reported poor mental health

General health assessed by SF-12  
Mental health assessed by GHQ-12

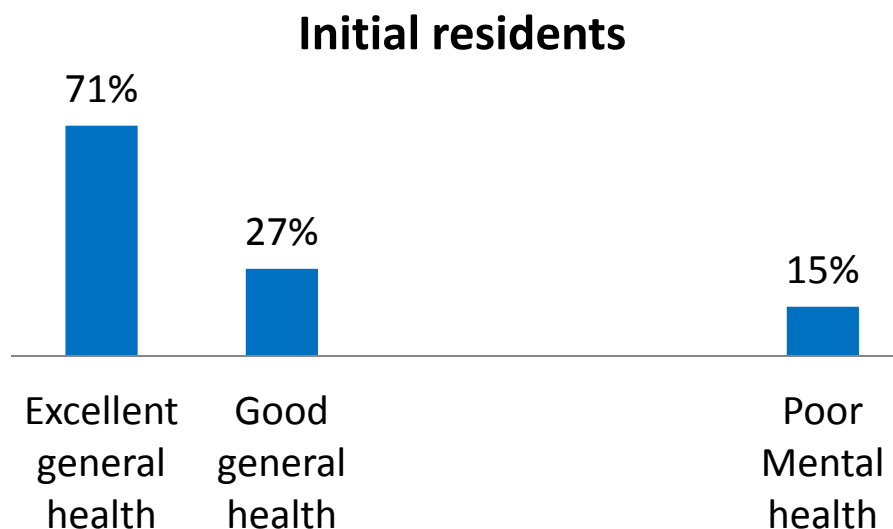




# HEALTH: INITIAL RESIDENTS

## Positive self-perception of health

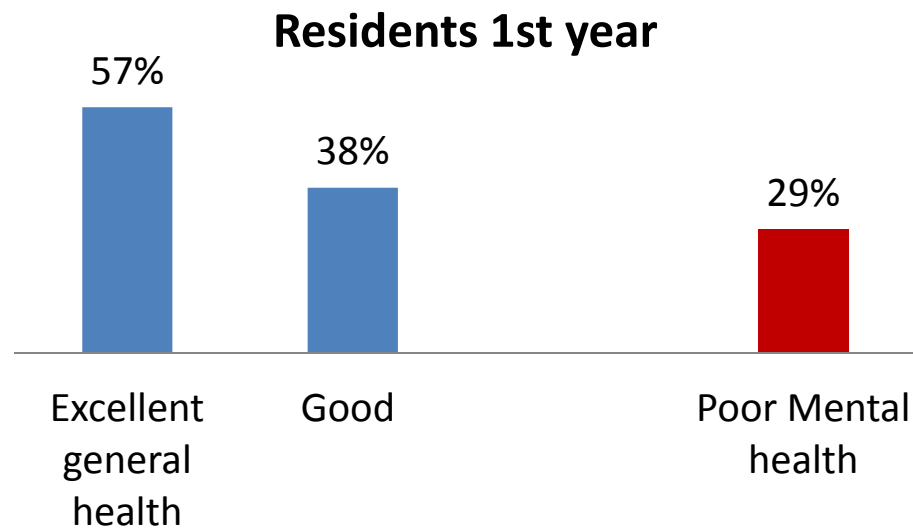
General health assessed by SF-12  
Mental health assessed by GHQ-12



# HEALTH: RESIDENTS 1<sup>st</sup> year

## Poor mental health increased

General health assessed by SF-12  
Mental health assessed by GHQ-12



# Unhealthy weight: under or overweight

The majority of students and residents reported healthy weight

BMI index



- Only over 21-27% reported unhealthy weight.

- Increased in residents

# PA and associated factors

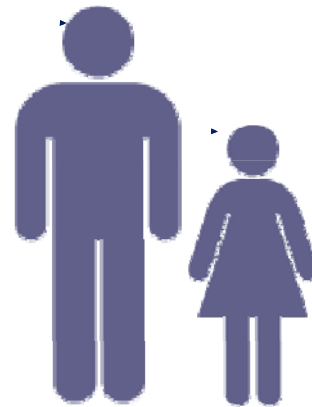
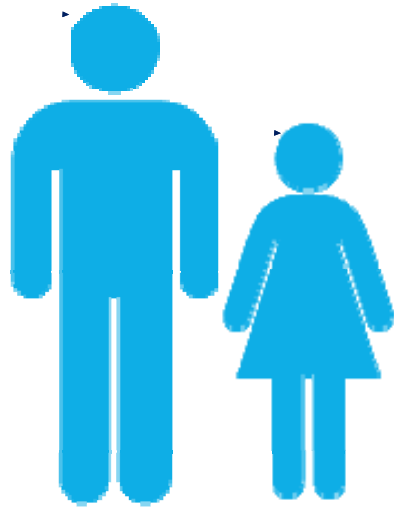
# PA and gender (1)

**Males are more physically active**

Significant associations with PA level

Age

Age



## PA and gender (2)

Males are more physically active **at vigorous intensity**

Significant associations with PA level



## PA and leisure time: **Residents 1<sup>st</sup> year**

**Having free time was positive associated to PA level**

Significant associations with PA level

**52% Residents after 1st year  
are not satisfied with personal leisure time**

# PA and Poor mental health (1)

High risk in students and residents 1<sup>st</sup> year

Significant associations with PA level

Low level of PA (MPA and walking)



Poor Mental Health



**47%** in students and **29%** in 1st year residents



## PA and Poor mental health **by gender (2)**

**Women the most affected**



Significant associations with PA level

**In students: 50% of women vs. 37% in men**

**In residents: 18% of women vs. 9% in men**

**Women less physically active**



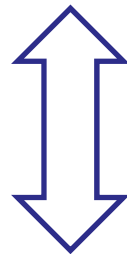
# PA and substances use

11.9% of students (86% women)  
9.7% of residents



Significant associations with PA level

↑ tranquilizers and sleeping pills



↓ VPA



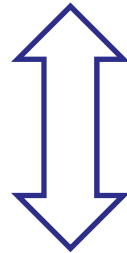
**Women less physically active**

# PA and stress level : Residents 1st year

**55% of residents (59% women)**

Significant associations with PA level

↑ stress level



↓ PA

# The most physically active

Significant associations with PA level

- **Men**
- **Normal-weight**
- **Good Self-perceived Health**
- **Good Mental Health**
- **Satisfied with Leisure time**

No Significant associations

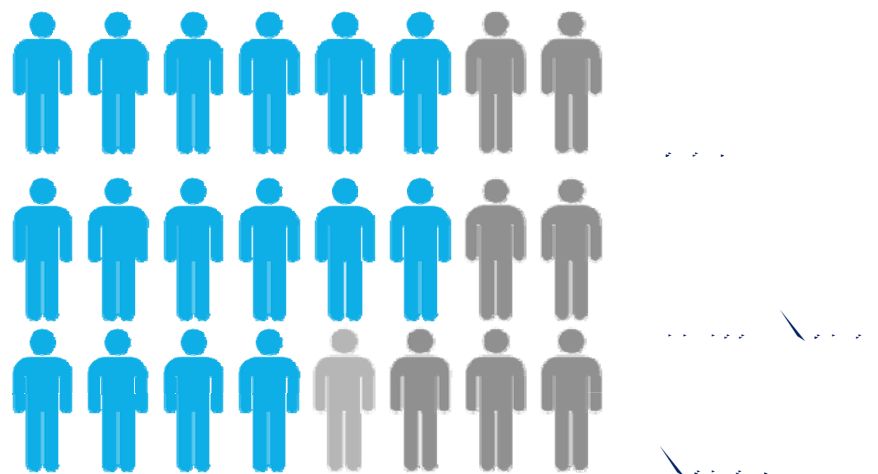
- Medical specialty
- Smoking
- Alcohol
- Marijuana consumption
- Sleeping hours

# Transition of medical students to residency

# Transition to residency: PA level

**PA level decreased 16% after 1<sup>st</sup> year residency**

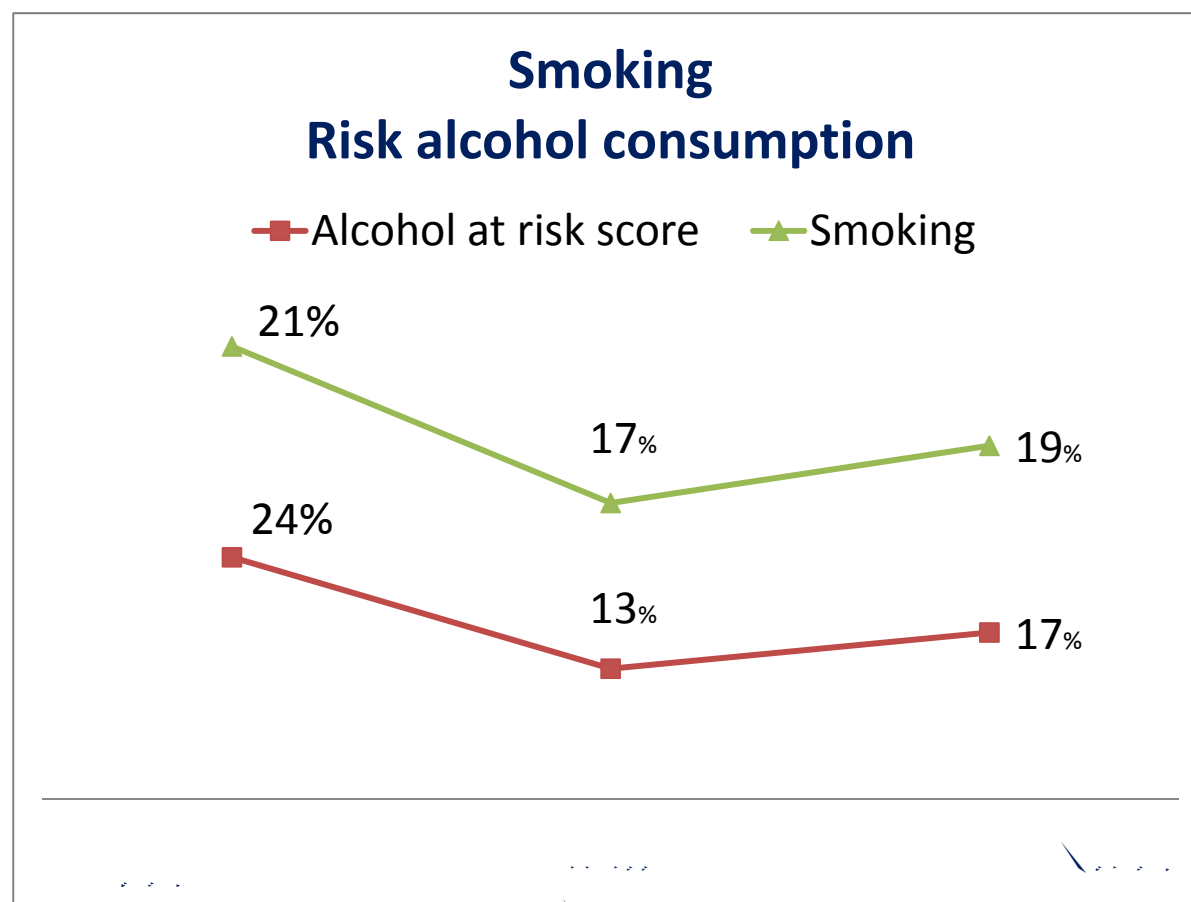
PA level distribution by training stages



**42% under-exercisers**

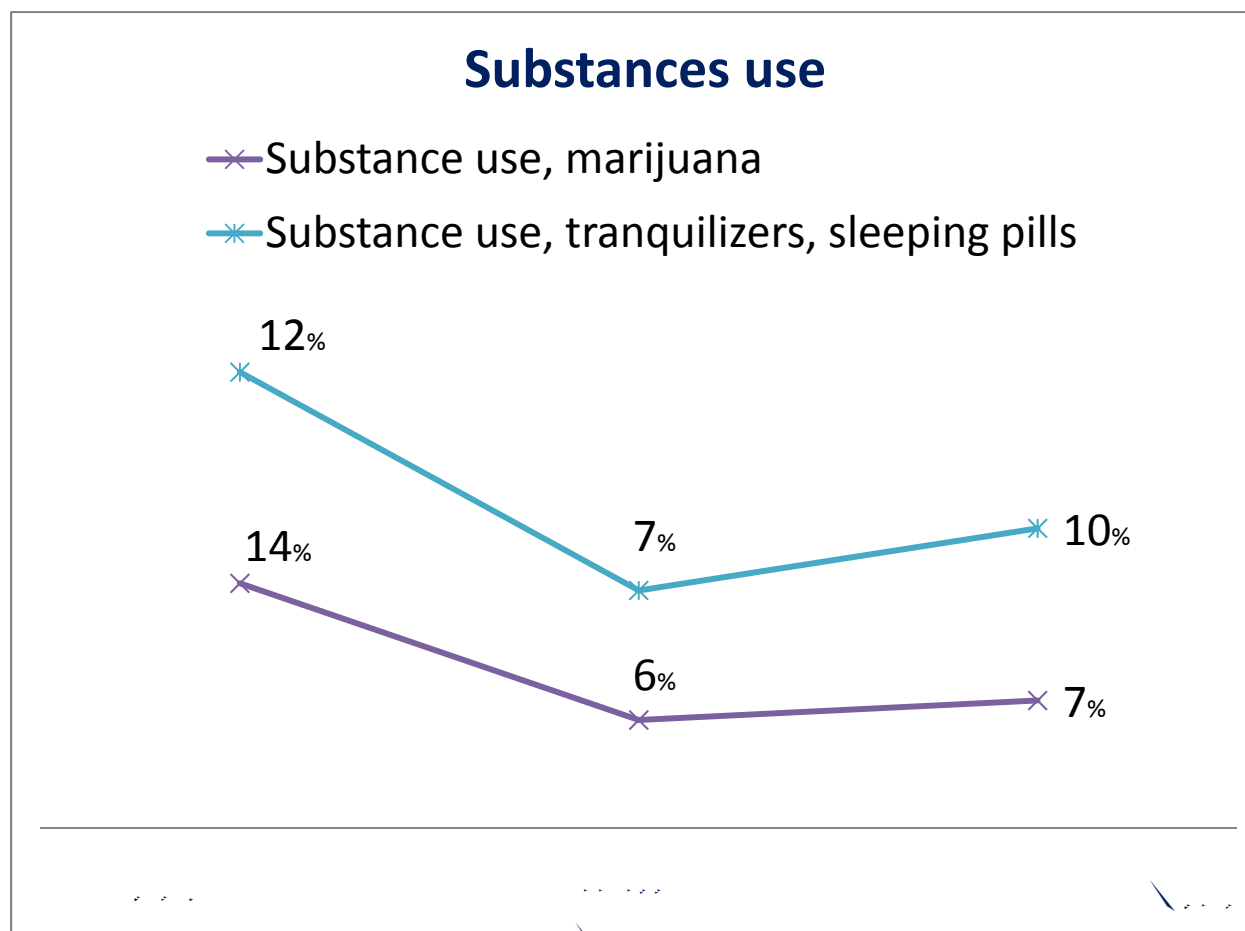
# Transition to residency

## Negative effect on health after 1st year residency



# Transition to residency

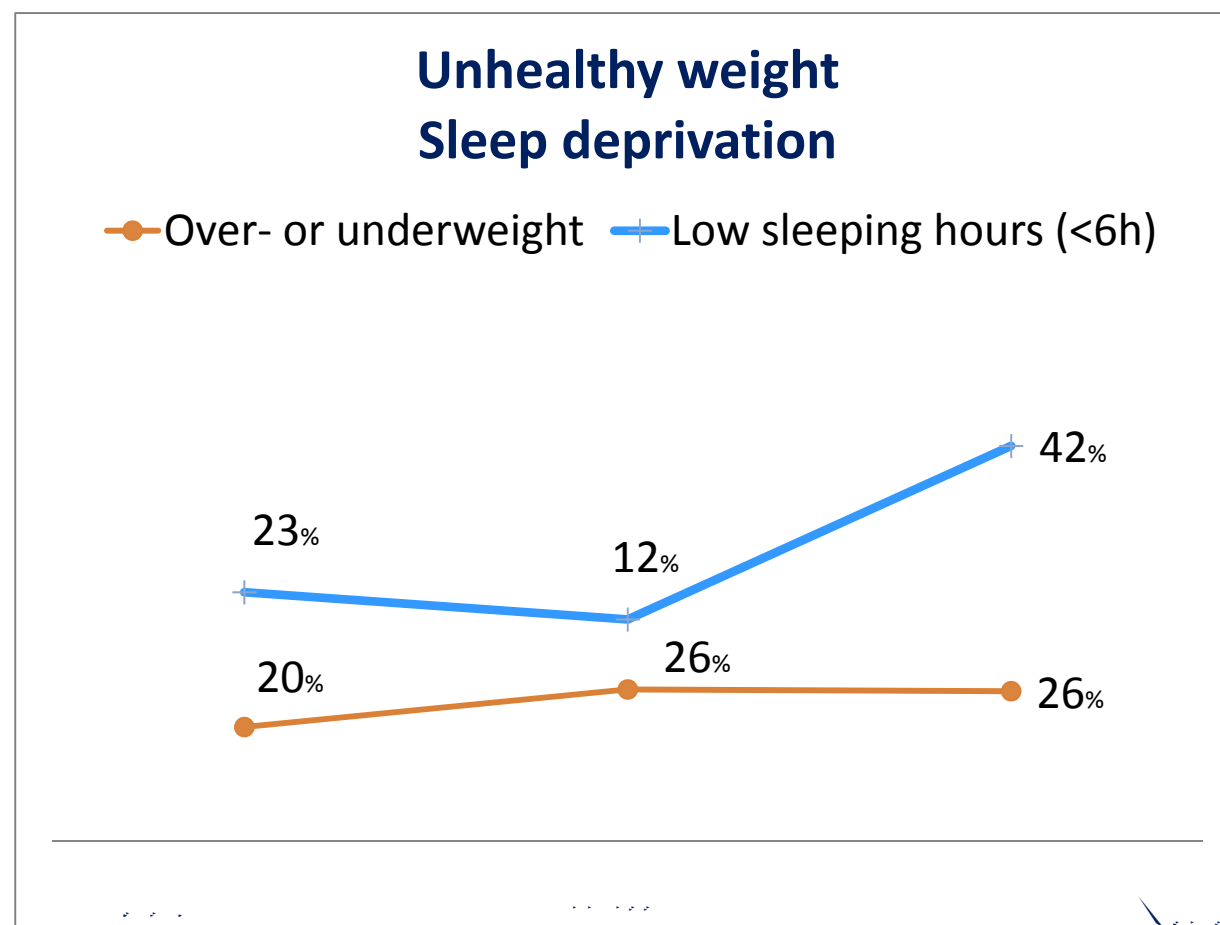
## Negative effect on health after 1st year residency





# Transition to residency

## Negative effect on health after 1st year residency



# Transition to residency

**Before Residency all lifestyle and health parameters improved.  
PA level stay similar.**

**After 1<sup>st</sup> year Residency:**

**↑ unhealthy lifestyle behaviors:**

**Smoking**

**Alcohol**

**Substances use**

**Self-perceived general and Mental health worsen**

# Conclusions

**High PA level before starting Residency training.**

**Doctors exercise mainly by walking and high intensity PA.**

**Those who exercise reported better health and mental health and healthy weight.**

**High risk of poor mental health in students and residents 1<sup>st</sup> year.**

**Low level of PA related to poor mental health**

**Those who exercise reported lower use of substances such as tranquilizers and low stress level.**

# Conclusions

**Medical students showed worse lifestyle behaviors than residents.**

**From all unhealthy lifestyle conditioning behaviors, Under-exercise is the most prevalent.**

**The first year of Residency training have some negative effects on health and lifestyle behaviors.**

- ↓ PA level**
- ↑ Poor mental health**
- ↑ Sleep deprivation**
- ↓ Satisfaction with Leisure time**
- ↑ unhealthy behaviors**

# Next steps

## In students:

- Promoting healthy lifestyle behaviors during medical school.
- Medical programs should address mental health in students at high risk : Strategies based on healthy exercise.

## In residents

- Planning strategies to integrate PA in residents daily routine: informal PA and/or PA at work setting
- Women, specially those at risk of psychosocial problems could benefit from PA interventions.

**More information**

**[www.fgalatea.org](http://www.fgalatea.org)**