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Late social rehabilitation after kidney transplantation in childhood

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Late social rehabilitation after kidney transplantation in childhood

- Patient and graft survival has steadily improved in pediatric kidney recipients over the last 30 years; however the data on **quality of life and social outcome of patients having reached adulthood** are still scanty.
- Therefore we studied the **social outcome** of a **cohort of 266 children transplanted before 1986**, younger than 16 years at the time of transplantation and **older than 20 yrs** at the time of the study



Late social rehabilitation after kidney transplantation in childhood

Patients I

From 1/1973 to 12/1985, 388 kidney transplantations were performed in 366 children younger than 16 yrs

Among them, 54 (15%) had died before age 20 and

46 (12%) had left the country or were lost to follow-up

The long-term social outcome of the 266 remaining patients older than 20 yrs is the focus of this study.



Late social rehabilitation after kidney transplantation in childhood

Patients II

Population characteristics (n=266)

156 males and **110** females

mean age at ESRD : **9.9** \pm **6** yrs

mean duration of dialysis : **2.3** \pm **1.6** yrs

mean age at transplantation : **11.9** \pm **4** yrs

mean age at the study : **31.7** \pm **5.4** yrs

mean final height : males : **156.6** \pm **9.4** cms (- 3 SD)

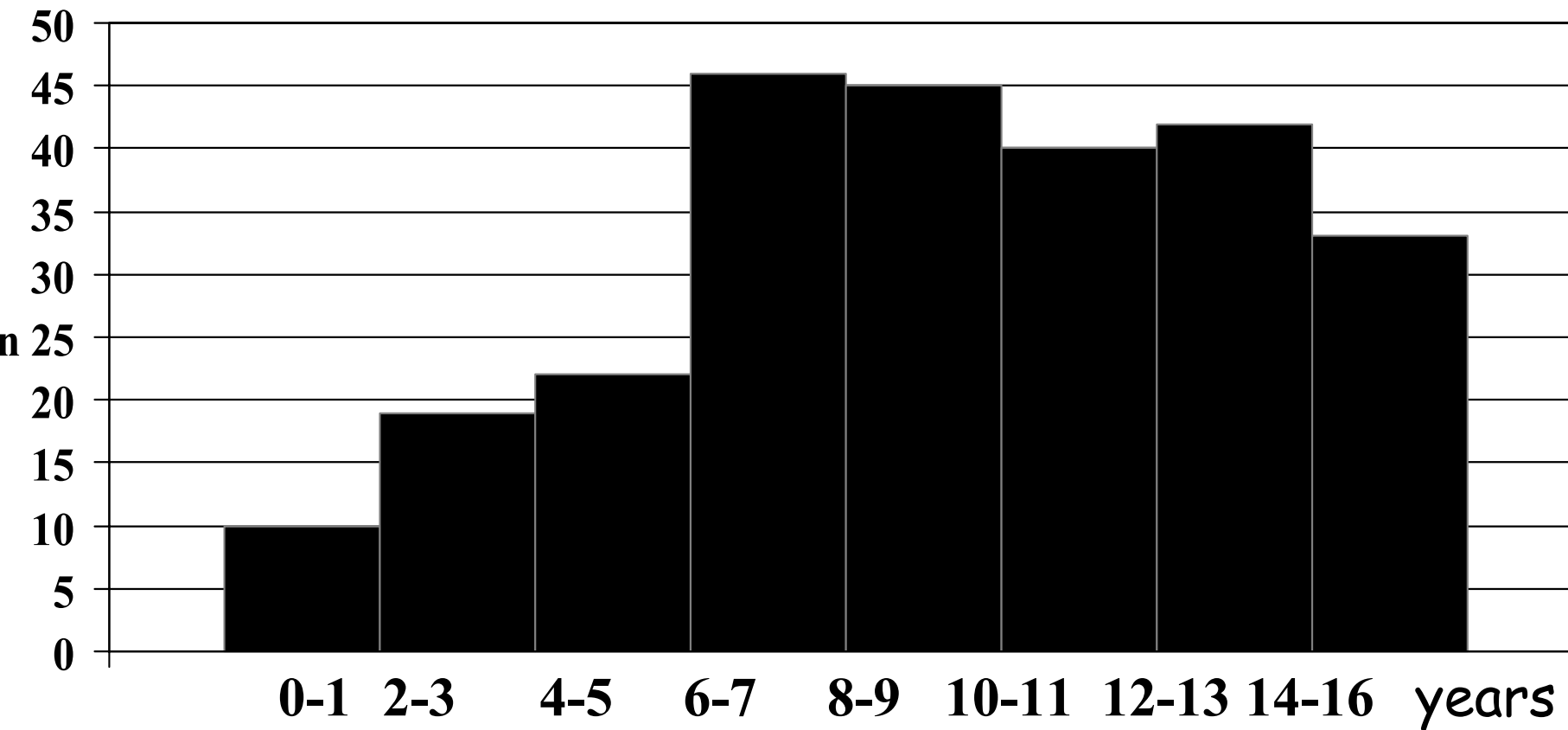
females : **147.7** \pm **8.7** cms (-2.5 SD)



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Age at ESRD

$m = 9.9 \pm 6$ yrs

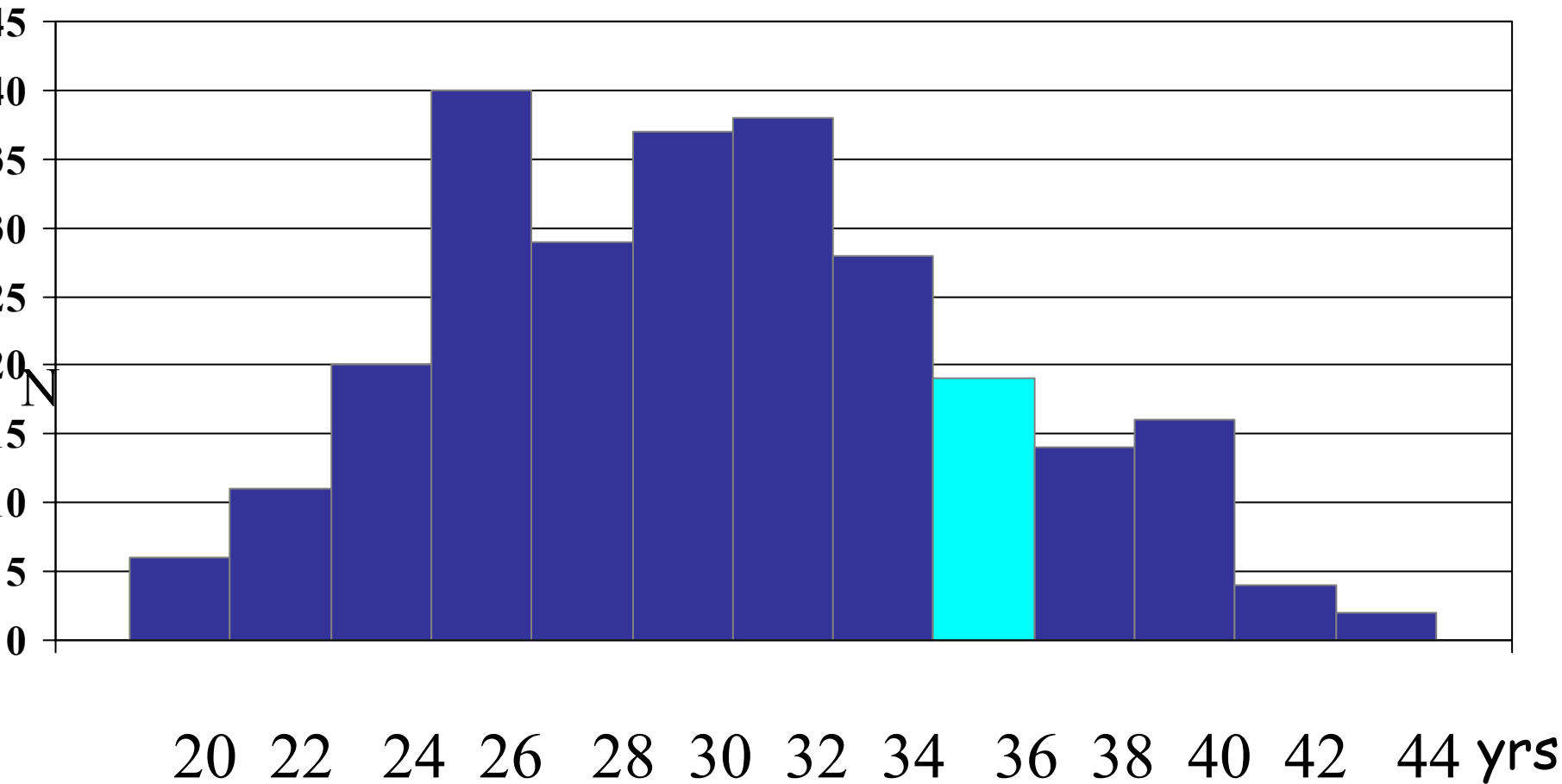




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Age at the study

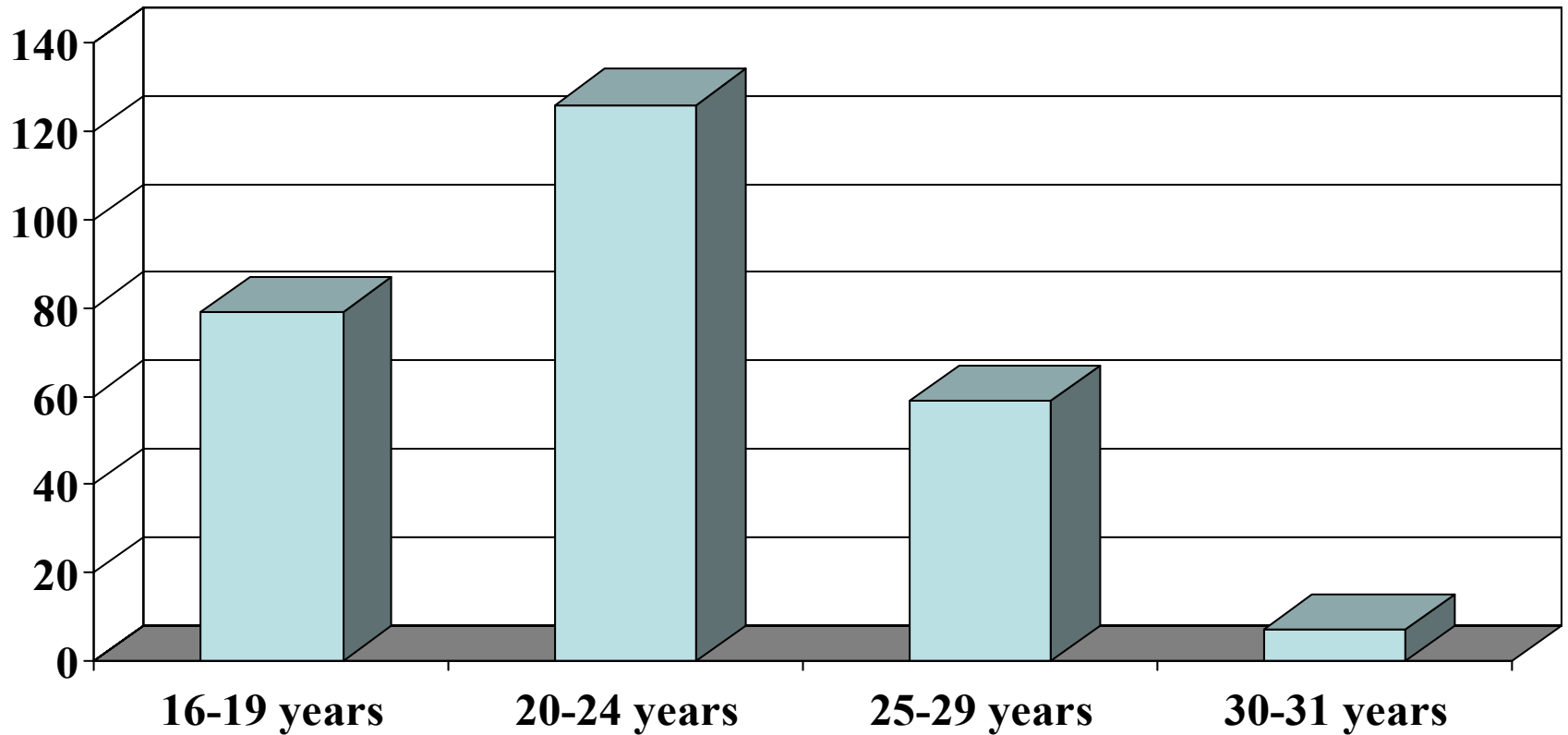
$m=31.7 \pm 5.4$ yrs





Late social rehabilitation after kidney transplantation in childhood

Duration of follow-up





Late social rehabilitation after kidney transplantation in childhood

Methods

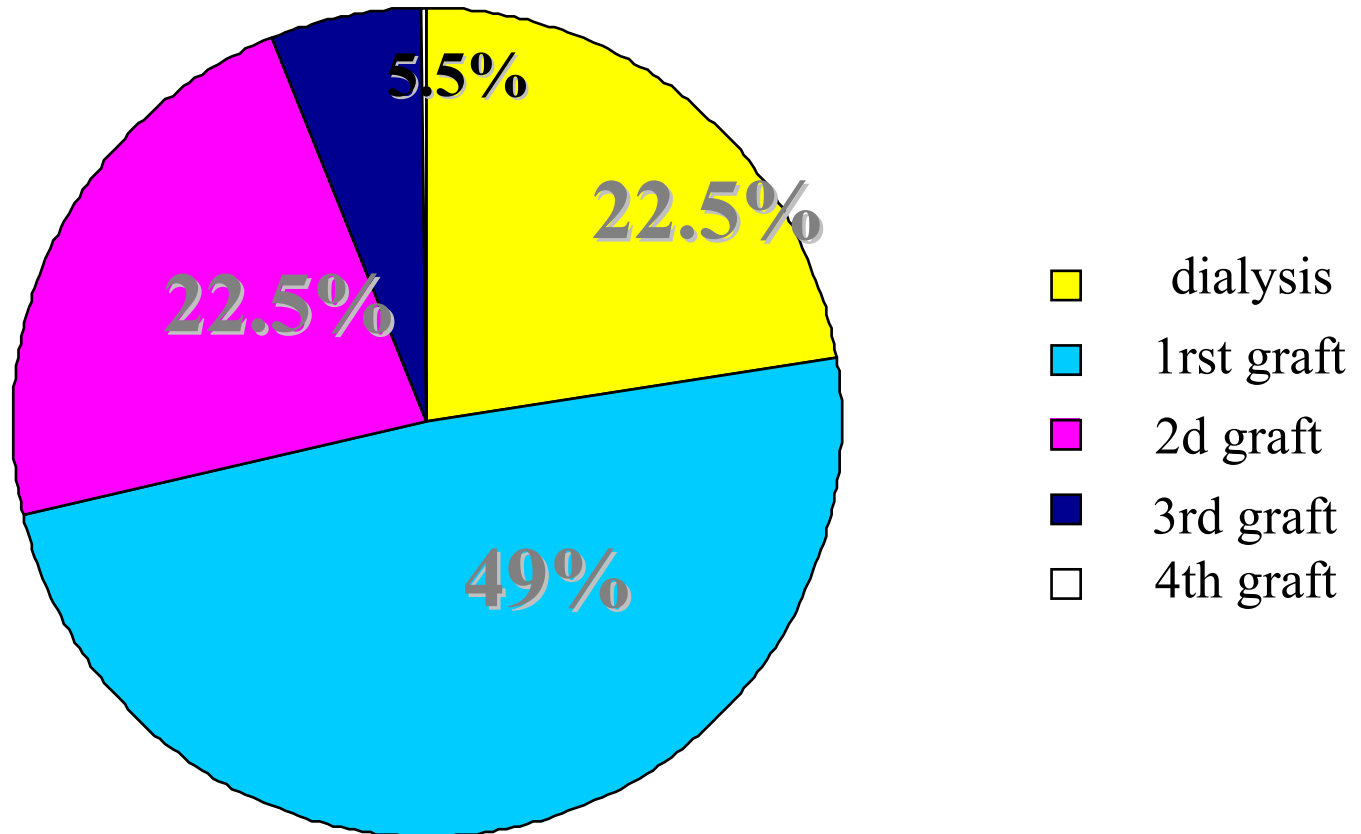
- Among the 266 patients, **22 (9%)** have some **mental impairment** and were studied separately.
- The other **244** were asked (directly or by letter or phone call) to complete, on a voluntary basis, a simple questionnaire about :
 - the most recent **mode of treatment**
 - their **cursus of education**
 - their **profession and present or past activity**
 - their **family situation** : «marital status» and offspring, lodging
- **Information was available for 94% of patients**



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Results I

Mode of treatment at the time of the study



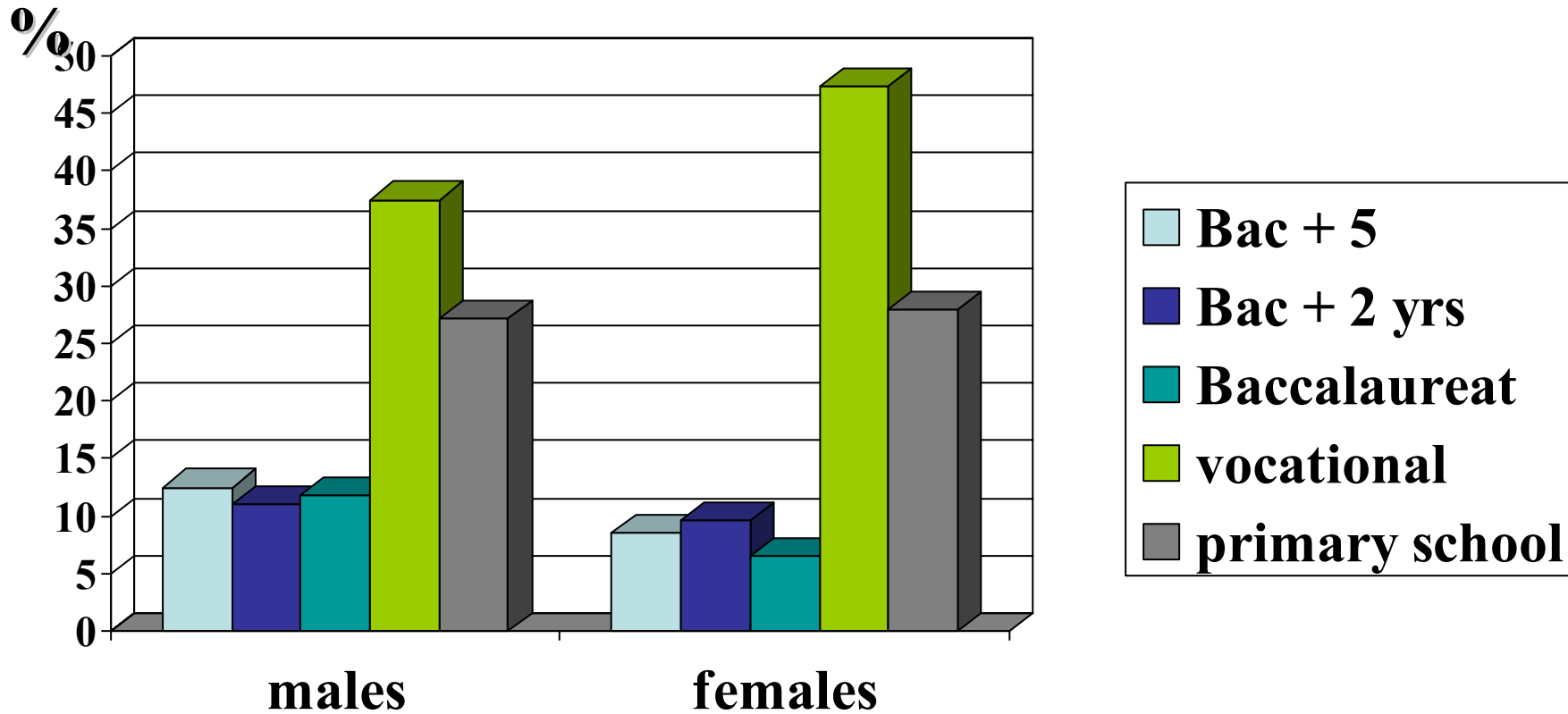
→ 77.5 % with functioning graft



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Results II

Education and diploma

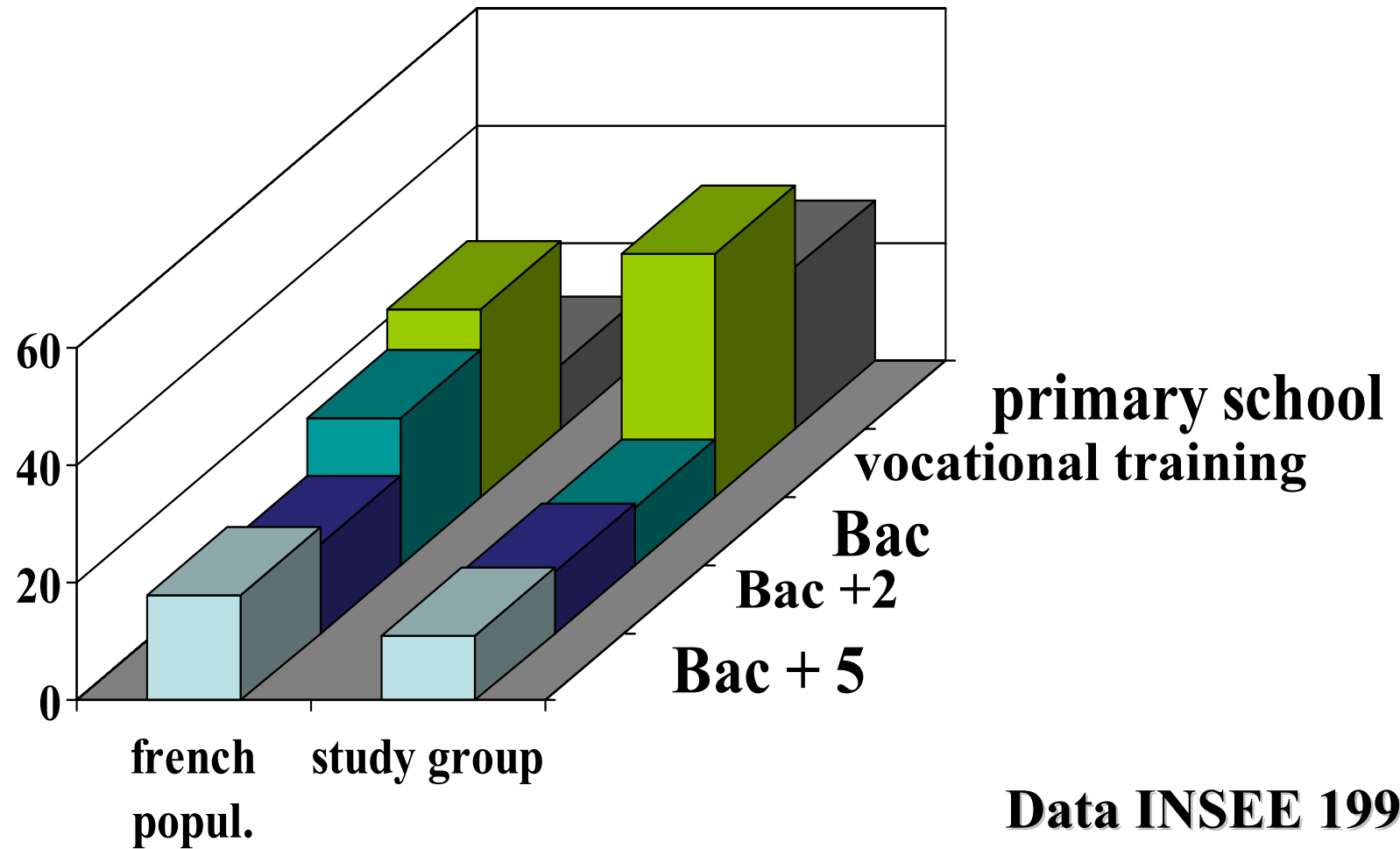




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Education-II

Education and diploma: comparison with the French population



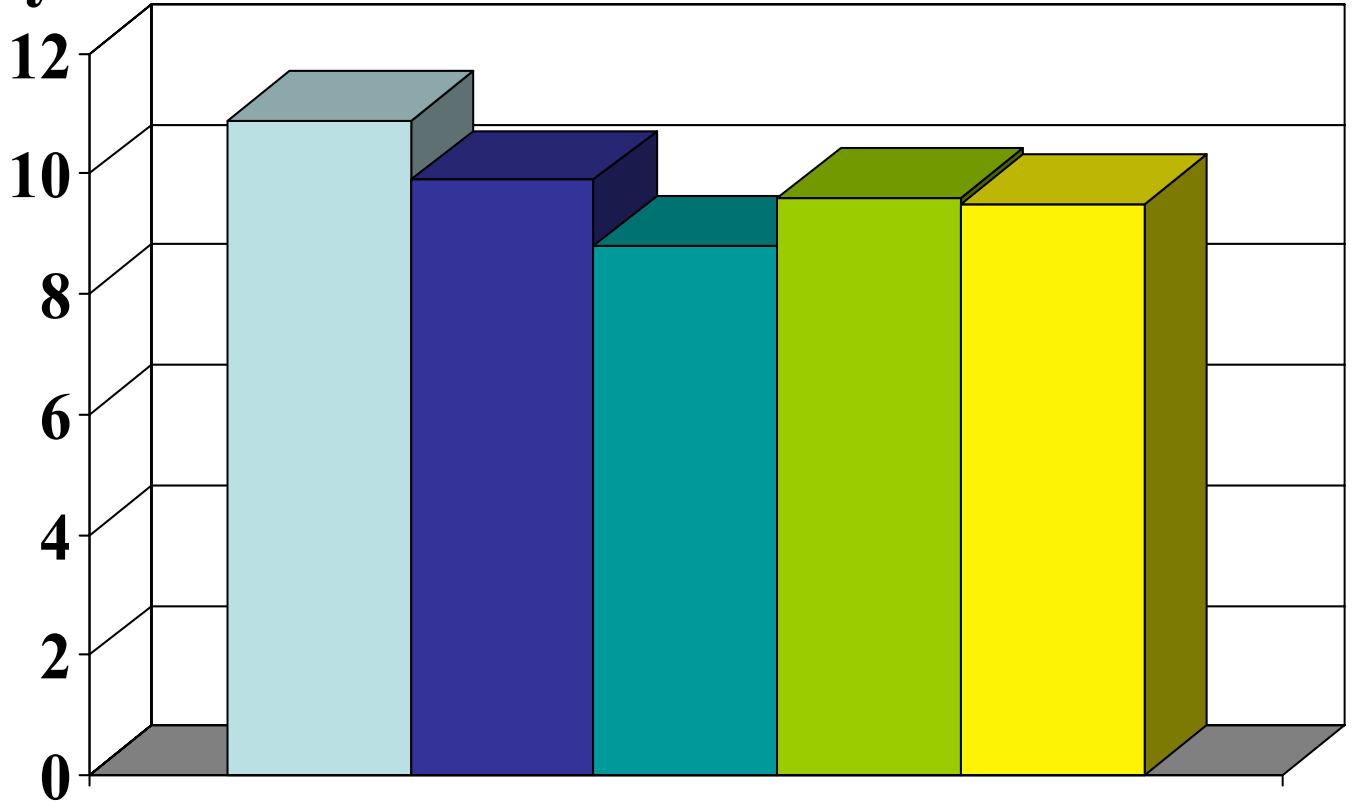


childhood

Education-III

Mean age at ESRD in different levels of education

yrs



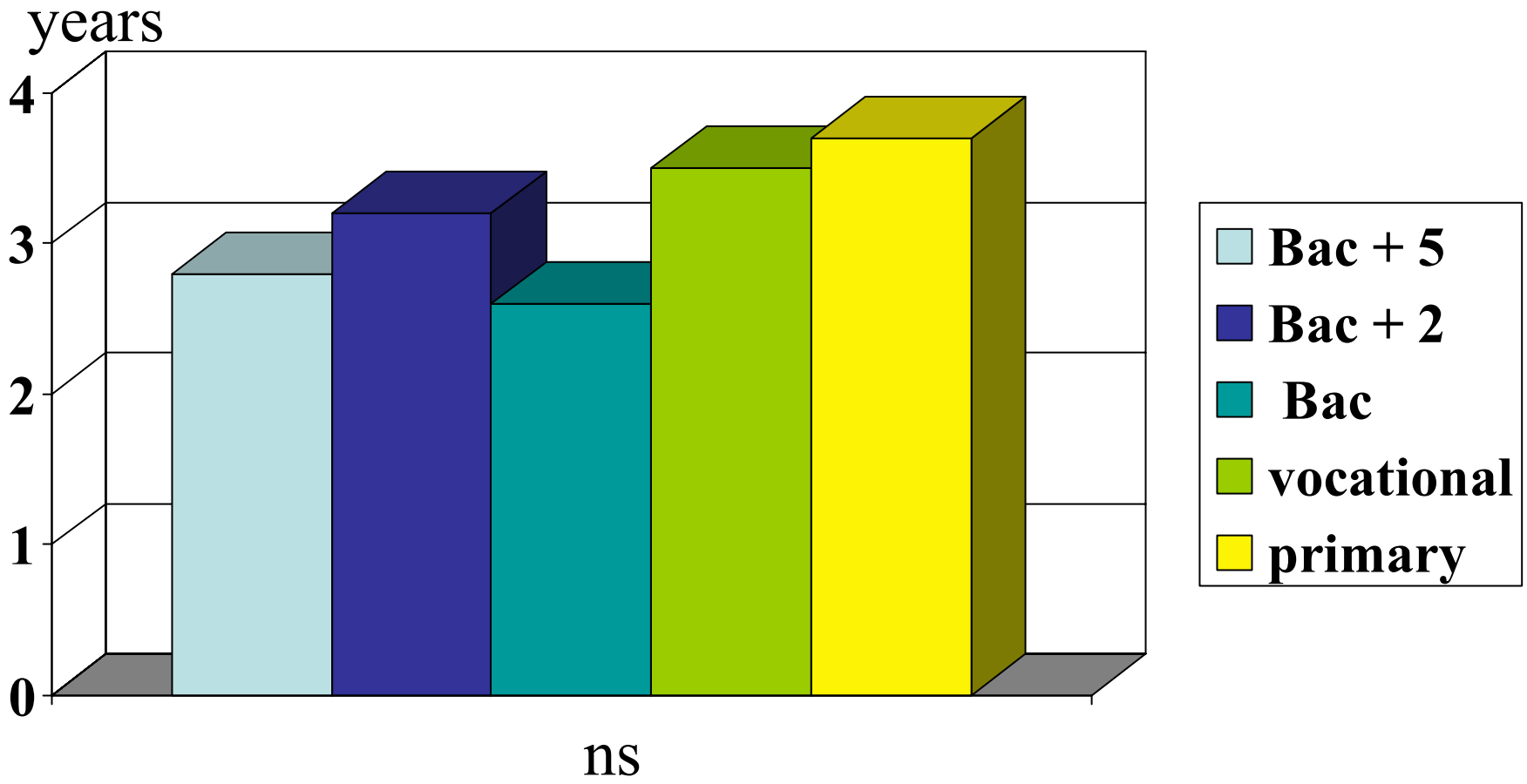
- Bac + 5**
- Bac + 2**
- Bac**
- vocational**
- primary**

ns



childhood **Education-IV**

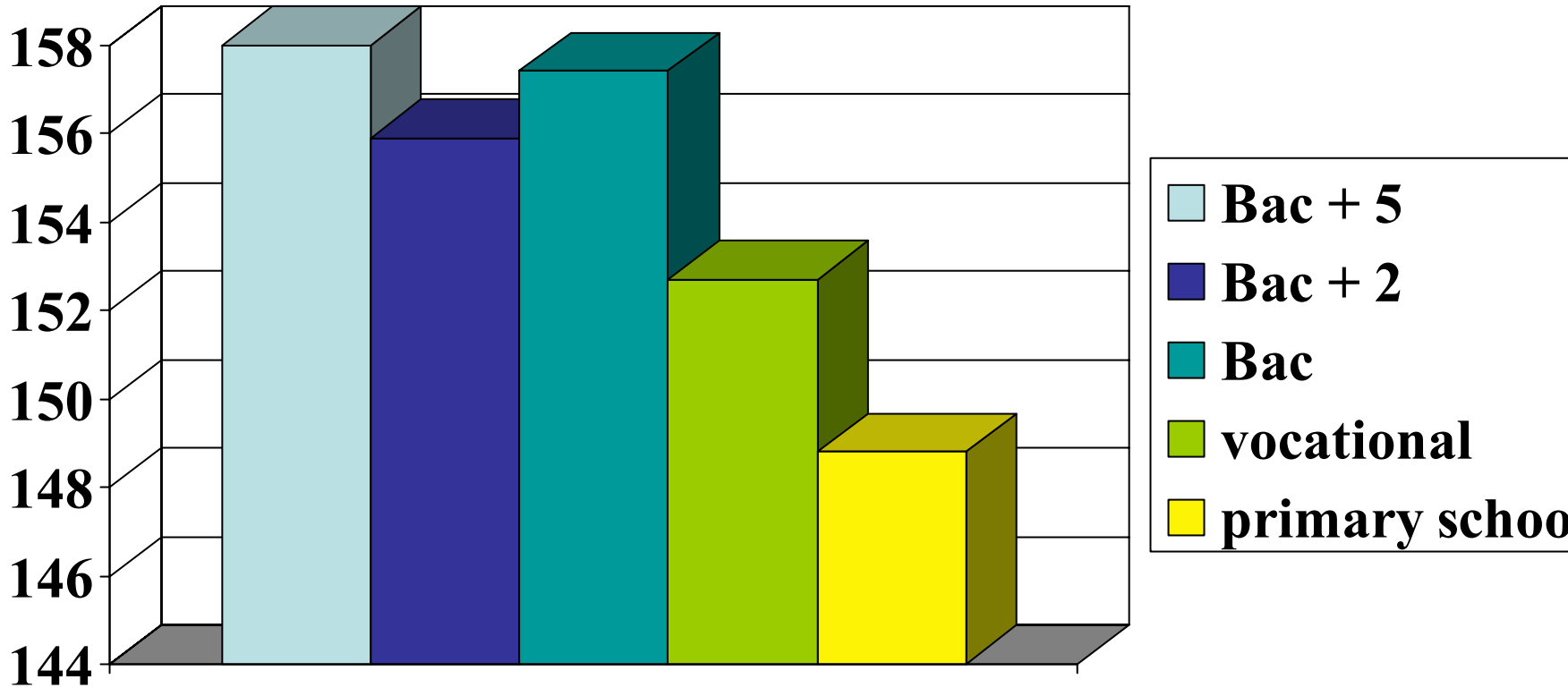
Mean duration of dialysis in different levels of education





childhood **Education-V**

Mean final height in different levels of education

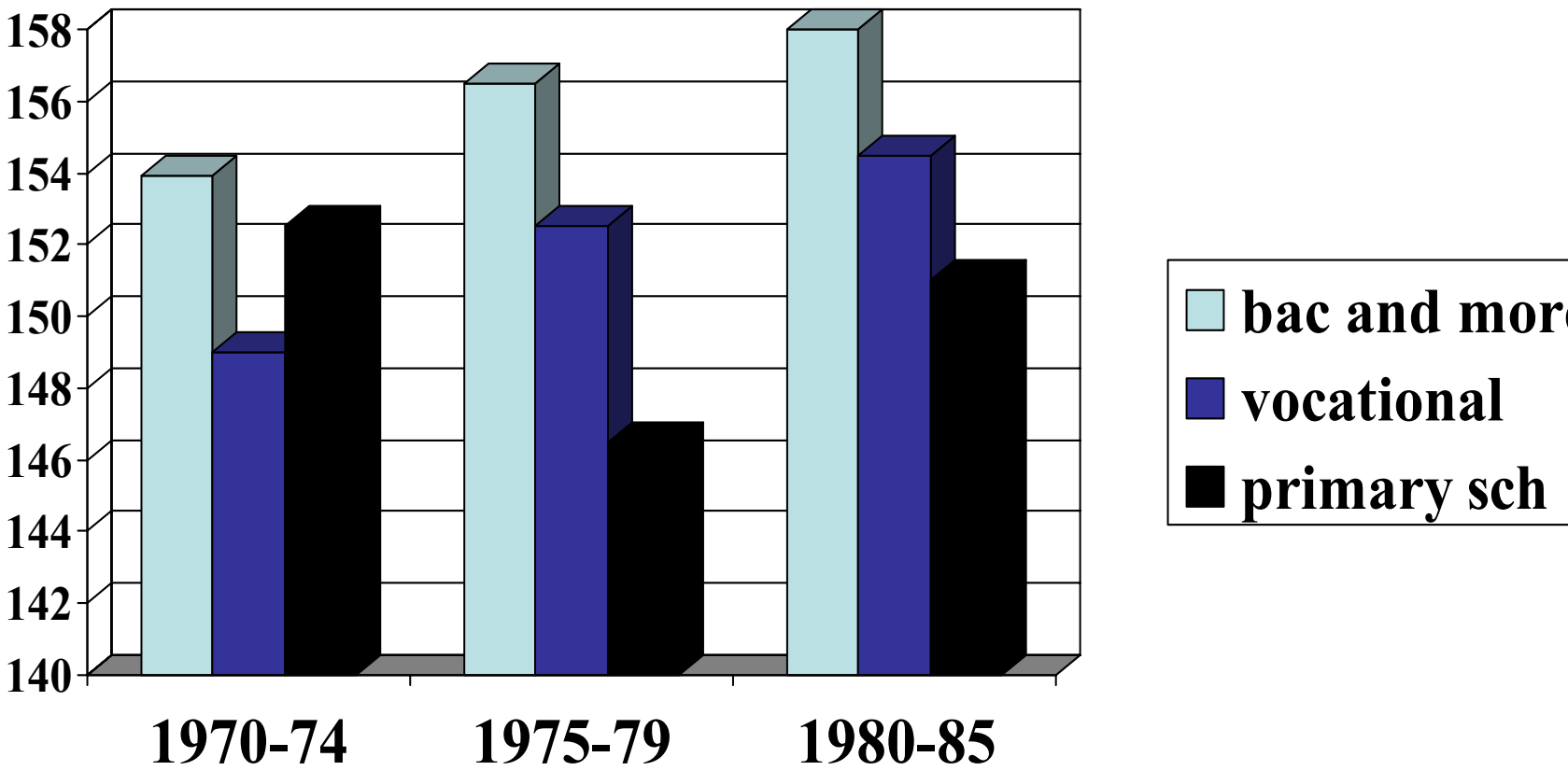


P<0.001



childhood **Education-VI**

Height and education level
over the years





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Education- Summary

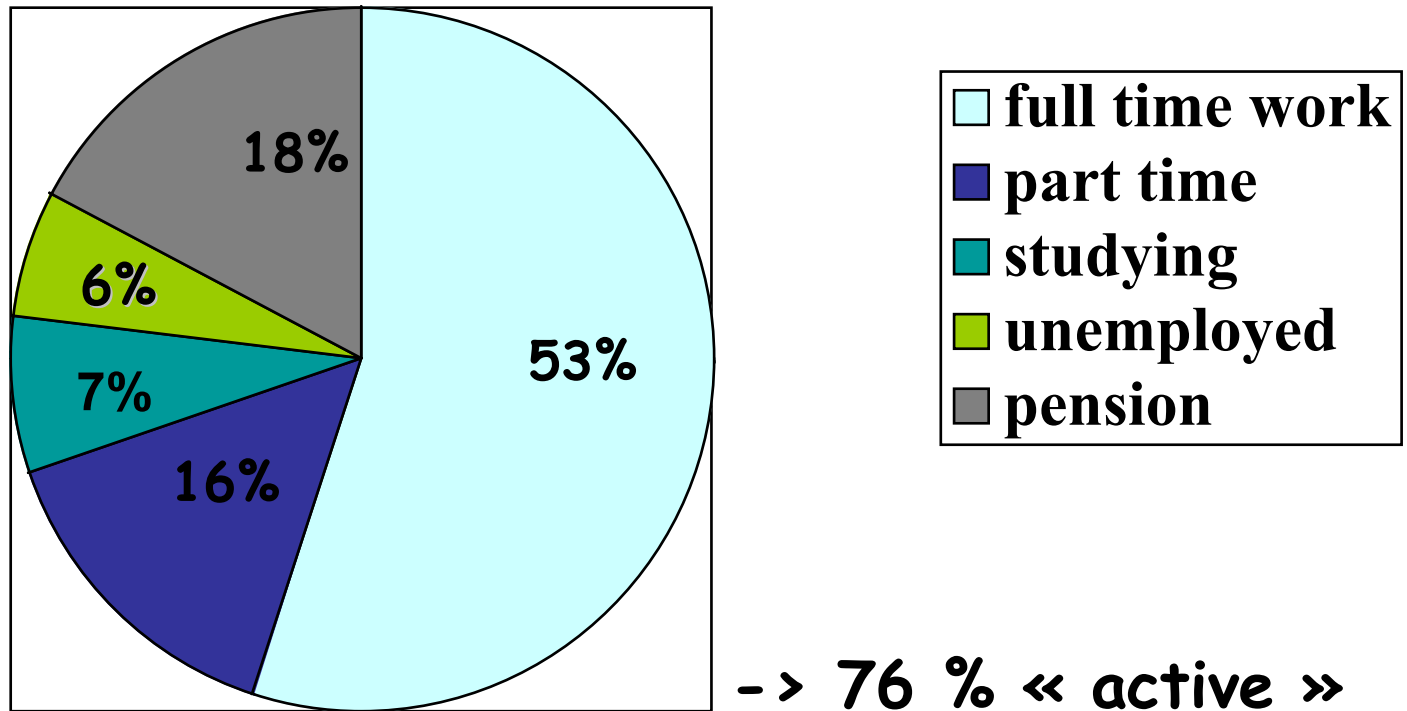
- The **educational level** was **clearly lower** than in the french population of same age : **27 % (vs 4%)** were at the **lowest level** and **31% (vs 43%)** had **passed the «baccalaureat»** (french high school diploma).
- **Educational level** was not related to age at ESRD or duration of dialysis but was **significantly correlated to final height**, whatever the years when RRT was started.
- However, **height and educational level improved slightly** over the years.



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Results - III : Present activity

Type of activity (238 patients)





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in childhood - **Activity-II***

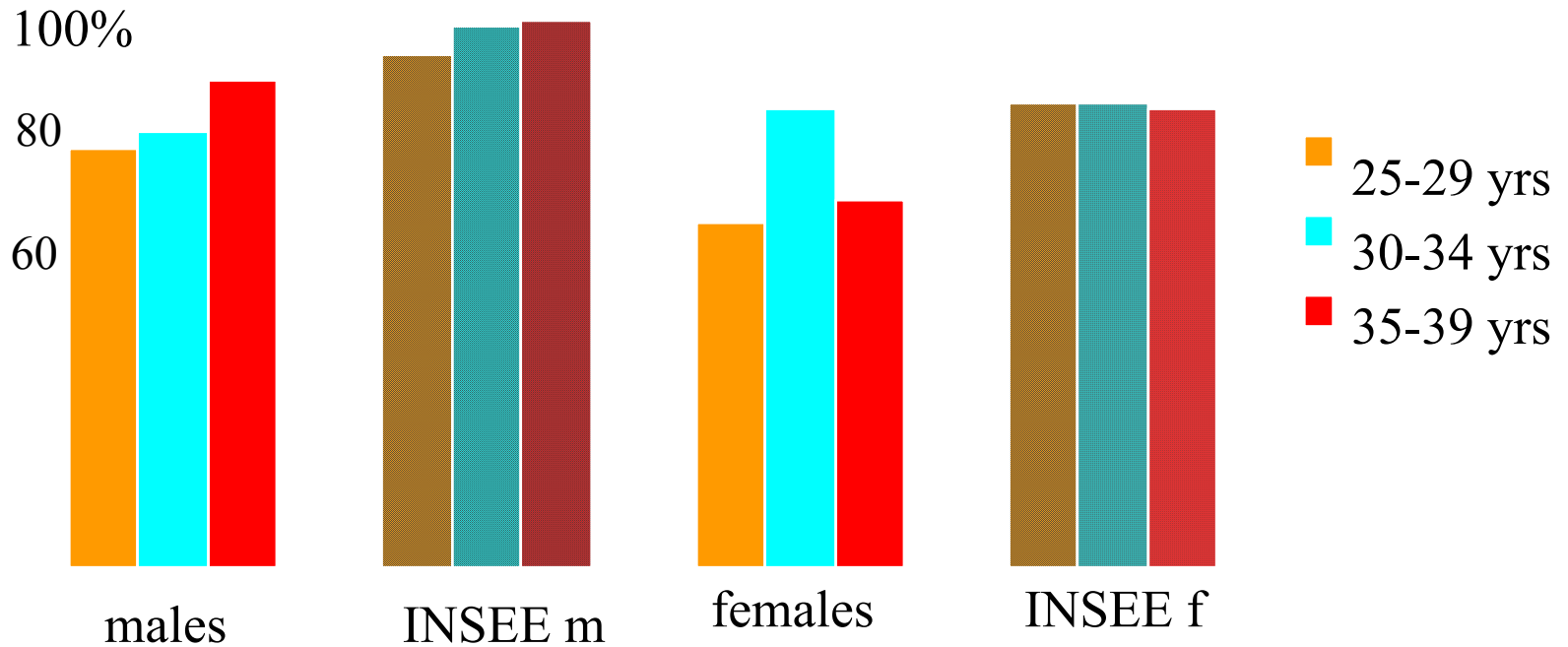
Occupation

- Professionals, managers : 21 (11%)
- technical qualified job: 65 (36%)
- poorly qualified work : 60 (33%)
- intermittent jobs : 4 (2%)
- protected workshop : 5 (3%)
- Mothers at home : 6 (3%)
- Still in education or training : 18 (10%)



Late social rehabilitation after kidney transplantation in childhood **Activity-III**

Proportion of active patients according to age and sex Comparison with national data

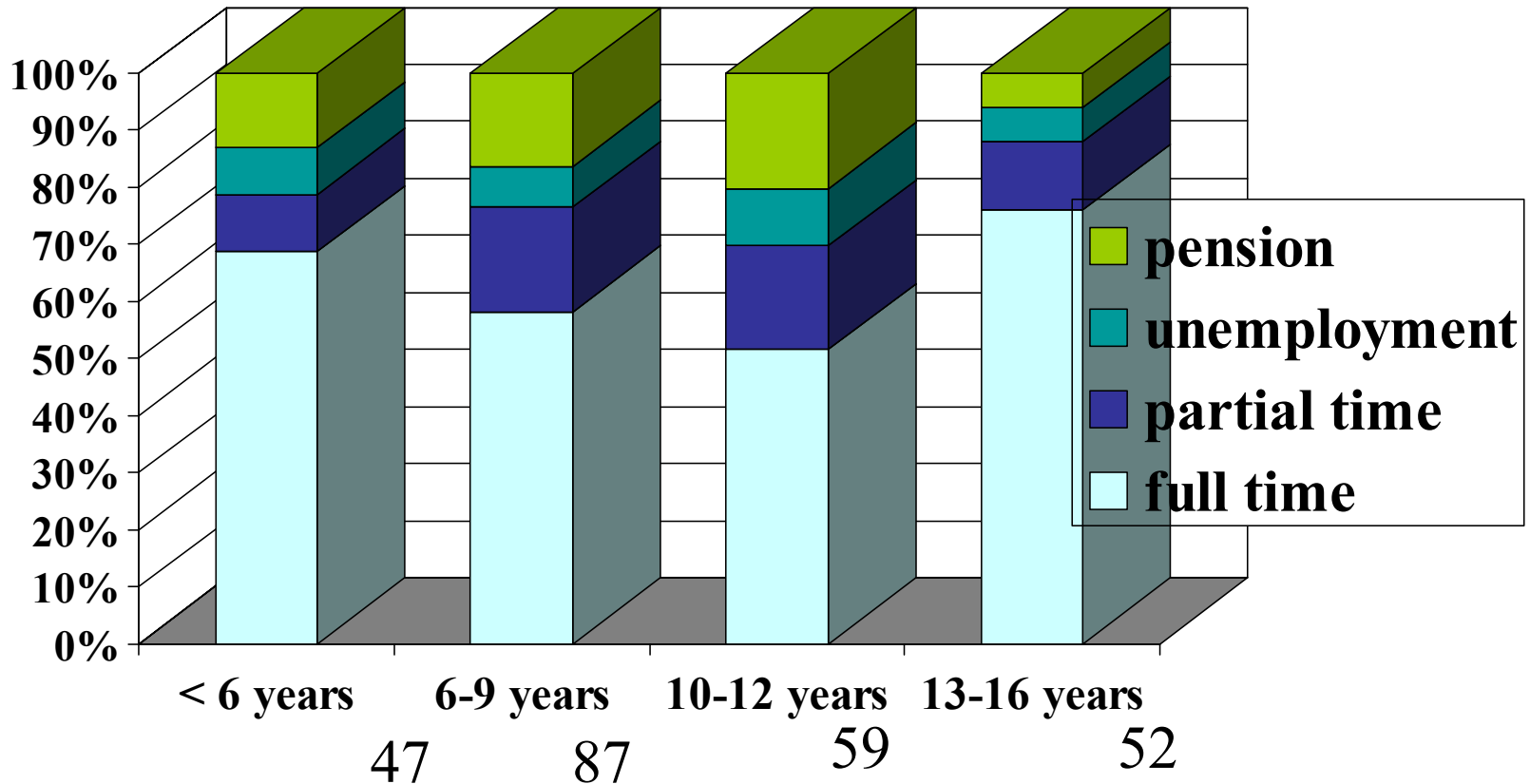




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Activity-IV

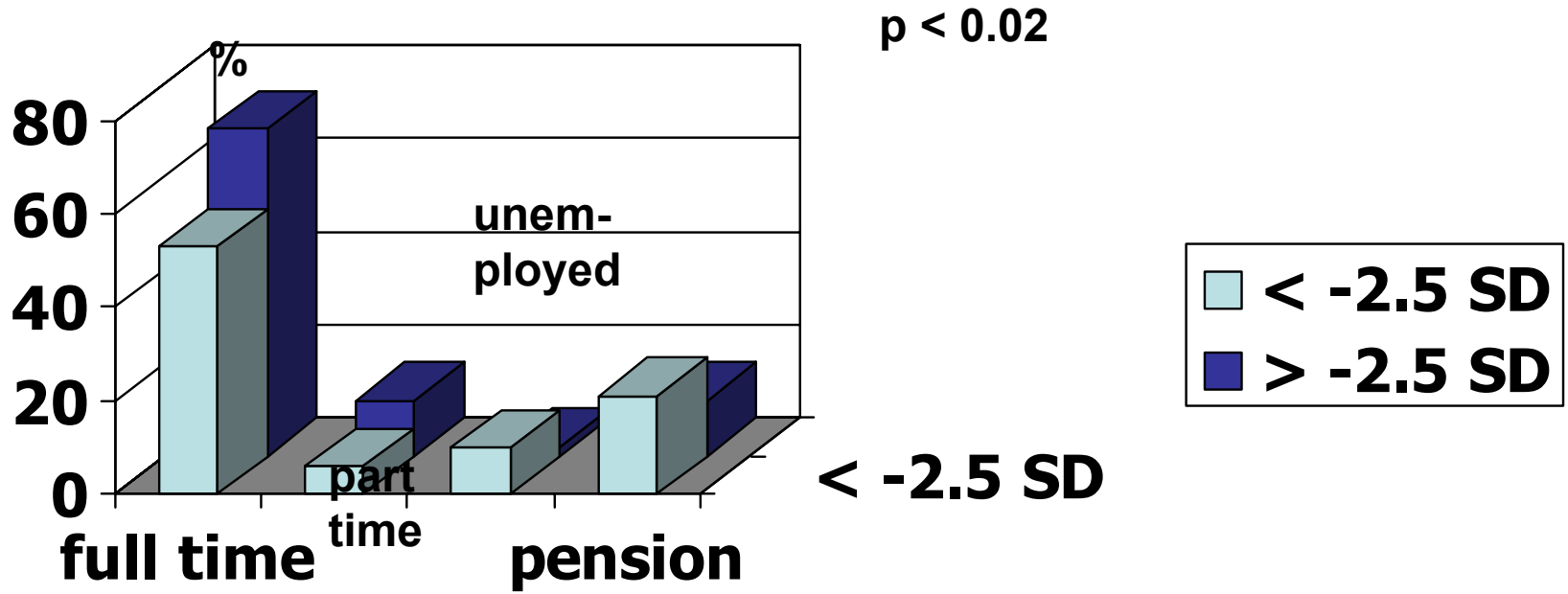
Activity according to the age at ESRD





Late social rehabilitation for kidney transplantation
in childhood - **Activity-V**

Activity according to final height (SD)





Late social rehabilitation after kidney transplantation in childhood

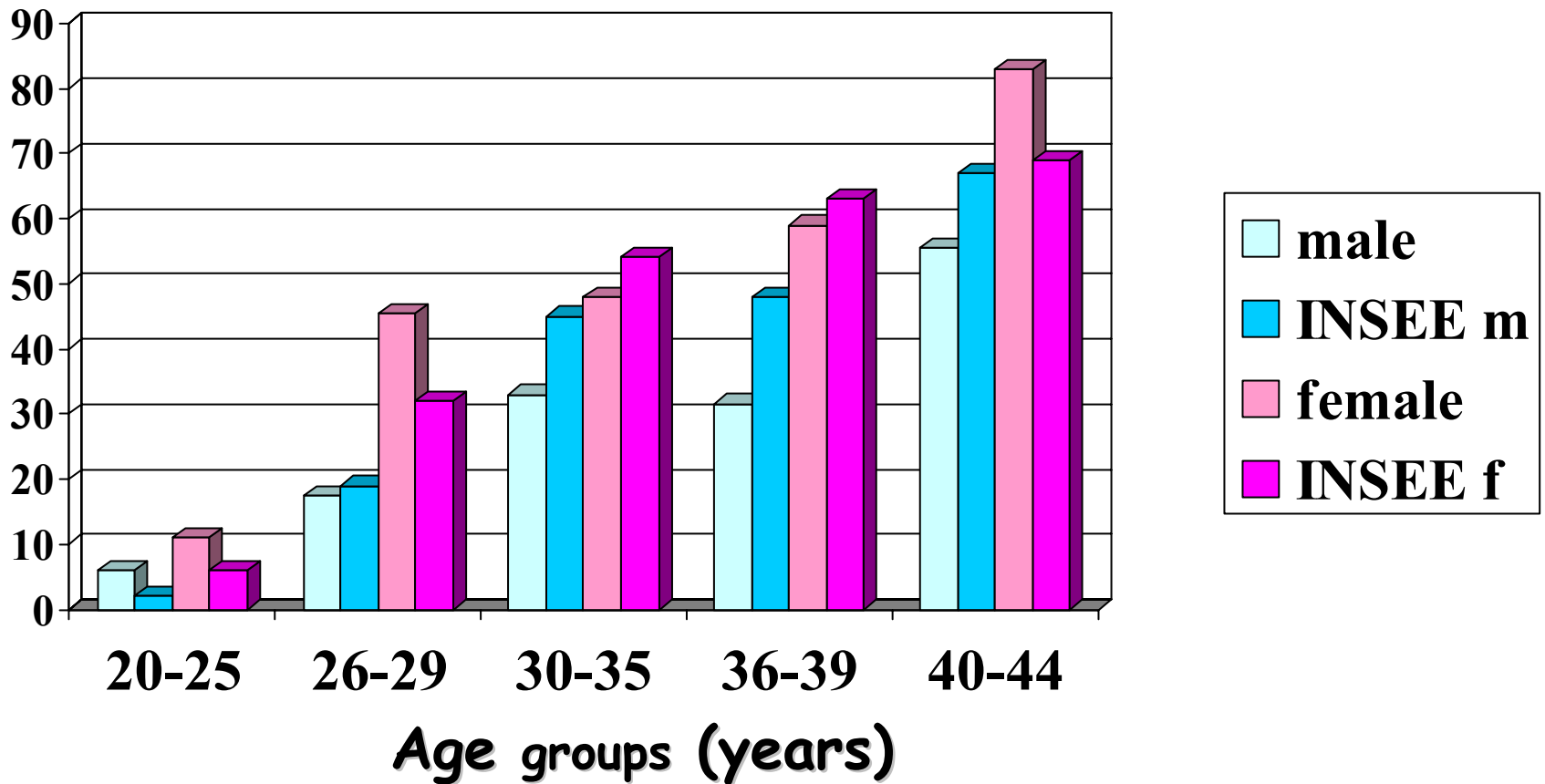
Activity- Summary

- The activity rate (76%) was slightly lower than in the general population : 65% (vs 72%) had paid employment; of them, 82% worked full-time and 18% (24% of females and 15% of males) worked part-time
- Only 6.5 % (vs 10.5%) were unemployed; however as much as 18 % received a disability pension.
- The level of activity was not related to the age at ESRD or at grafting, but was related to the final height, with less full-time activity in patients with height inferior to - 2.5 SD.



*Late social rehabilitation after kidney transplantation
in childhood* **Results IV- Social life-I**

Rate of marital life according to age groups
Comparison with national data

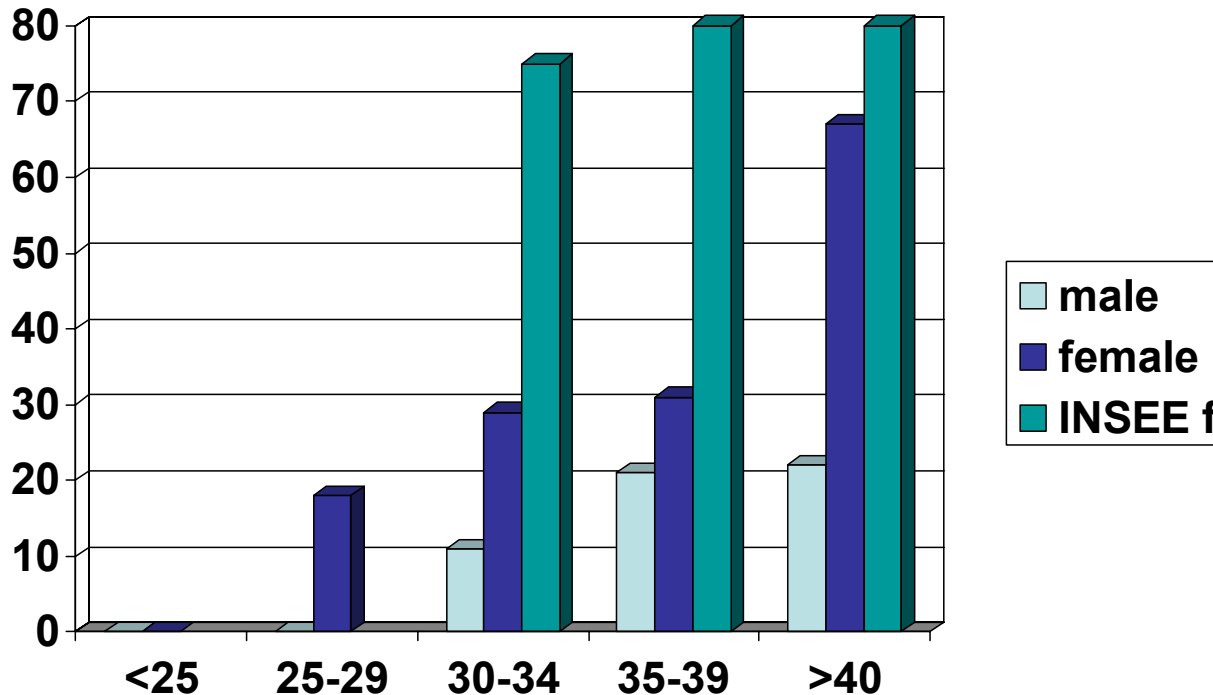




in childhood **Social life II**

Offspring

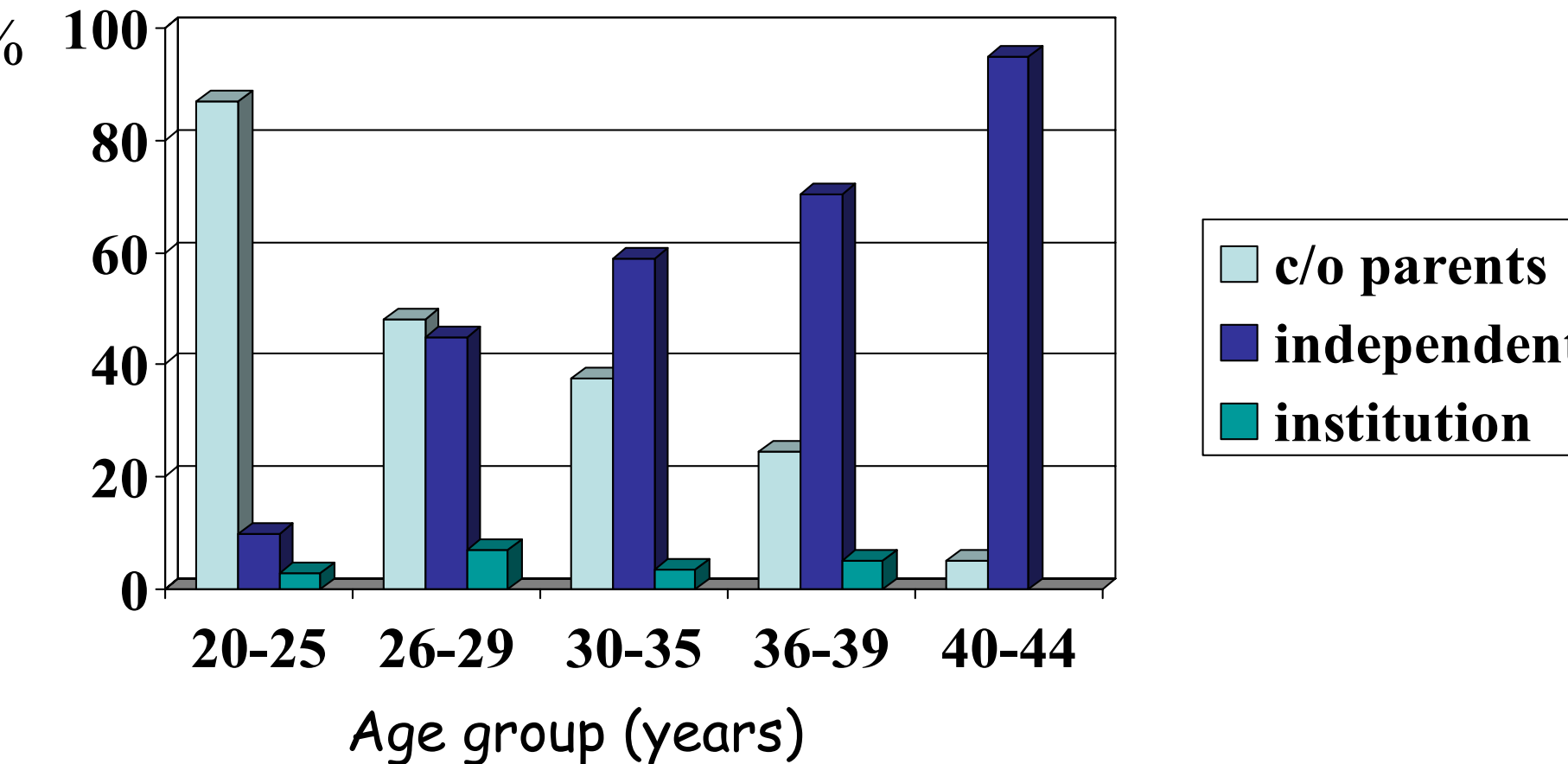
Proportion of males and females with children according to age





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in childhood* **Social life-III**

Residence according to age at the time
of the study





Late social rehabilitation after kidney transplantation in childhood

Social life-Summary

The rate of marital life increased from 8% in the age group 20-25 yrs to 71% at ≥ 40 yrs

39/149 males (26%) had a marital life and 12 (8%) had children

48/95 females (50%) had a marital life and 26 (27%) had at least 1 child

Their residence was at the parents' home in 46% and in an independent lodging in 54%; the rate of independent housing increased from 7% at 25 yrs to 95% at 40yrs.



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in childhood*

Social life-Summary II

- These data reveal a **significant delay in setting up adult social life** in these patients, particularly in males
- As a whole, our results are in agreement with those of other recent reports (*Kärrfeld & Berg 2008, Rees 2007, Groothoff 2005, Rosenkranz 2005*)
- Finally, we studied the **most determining factors** of the social life in our patients



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Influence of gender

	males	females	<i>p</i>
• Age ESRD	9.5	9.9	ns
• Dialysis duration >3y	23%	22%	ns
• Education			ns
• Marital life	26%	51%	<i>0.001</i>
• Offspring	8%	27%	<i>0.001</i>
• Independant residency	49%	61%	<i>0.07</i>



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Associated factors :logistic analysis **Marital life**

	yes	no	p
• Age	34.2	30.3	<i>0,0001</i>
• Age ESRD	11.3	8.8	<i>0,0001*</i>
• Dialysis duration	3.2	3.5	ns
• Education level			ns
• Height	156.3	151.2	<i>0,0001</i>

(* :age and age at ESRD correlated)



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Associated factors :logistic analysis

Residence

	independent	parent house	<i>p</i>
• Age	34.3	28.7	0.0001
• Age ESRD	11.3	7.9	0.0001*
• Dialysis duration	3.5	3.2	ns
• Education level			ns
• Height	155.2	150.8	0.003

(* :age and age at ESRD correlated)

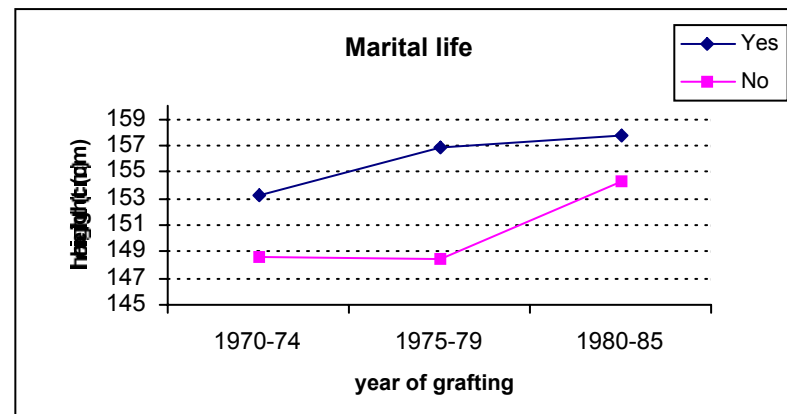
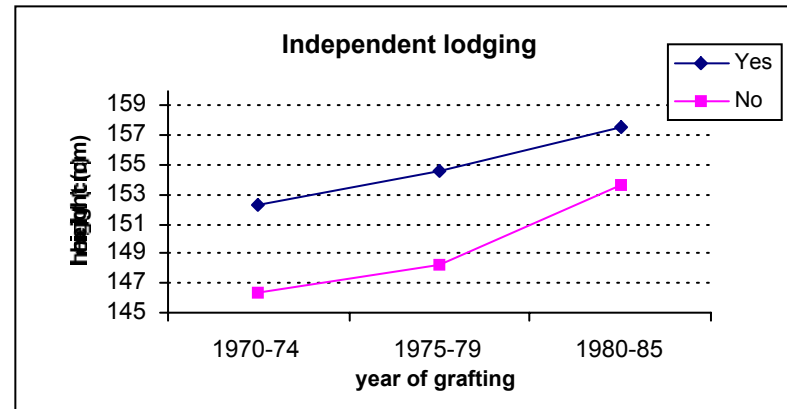
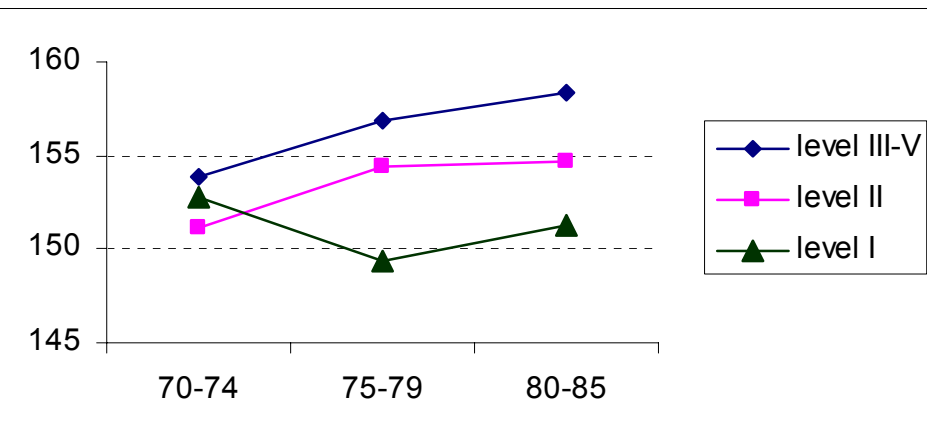


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Role of final height

on educational level, marital life and residence,
according to the years of RRT

Educational level





Late social rehabilitation after kidney transplantation in childhood

Conclusions I

- **83%** of children who received a kidney graft before 1986 reached adult age and **77%** had a functioning graft in 2001.
- Their educational level was lower than national average, but their rate of activity (**76%**) was quite satisfying.
- However their social life was largely delayed, reaching the national average for the proportion of marital life and independent residence at **# 40yrs of age**



Late social rehabilitation after kidney transplantation in childhood

Conclusions II

- Final height was the most prominent factor associated with good educational level, professional achievement and normal social life
- This emphasizes the **key role of statural growth** in the outcome of children with ESRD.
- It may be expected that the children treated early with **growth hormone** will have a **better social outcome.**





Late social rehabilitation after kidney transplantation in childhood

Outcome of the mentally disabled patients

- n = 22 (15 females, 7 males)
- **Activity** :
 - 5 full-time employments
 - 1 part-time work (protected workshop)
 - all receive disability pension
- **Residence**:
 - 17 in parents' home
 - 5 in specialised institutions
- **Marital life** : 0