

## Abstract

**Background:** Precocious Puberty (PP) is defined as the early onset of physical and hormonal changes in a child under the age of 8. The incidence of PP is increasing causing emotional and developmental challenges to children.

**Purpose:** The purpose of this literature review is to identify possible causative factors of PP in females.

**Method:** Using search terms such as precocious puberty, early puberty, menarche, psychological factors, premature thelarche, and premature puberty, a literature review was conducted. Of the 152 articles reviewed, 25 met the inclusion criteria.

**Results:** The prominent factors discovered in the literature are obesity, early childhood stressors, exposure to environmental toxins, increased access to the internet, and socioeconomic class.

**Implications:** P.P. has several implications for nursing and the family including family preparation, education, and the psychological and social well-being of the child. It is important for nursing professionals to support and educate parents and children of those with PP or at risk for PP.

**Keywords:** precocious puberty, early puberty, menarche, psychological factors, premature thelarche, premature puberty

## Methods

• **Search Terms used:** precocious puberty, early puberty, menarche, psychological factors, premature thelarche, and premature puberty

• **Databases used**

- Google Scholar
- EBSCOhost
- PubMed
- Elsevier Clinical Key

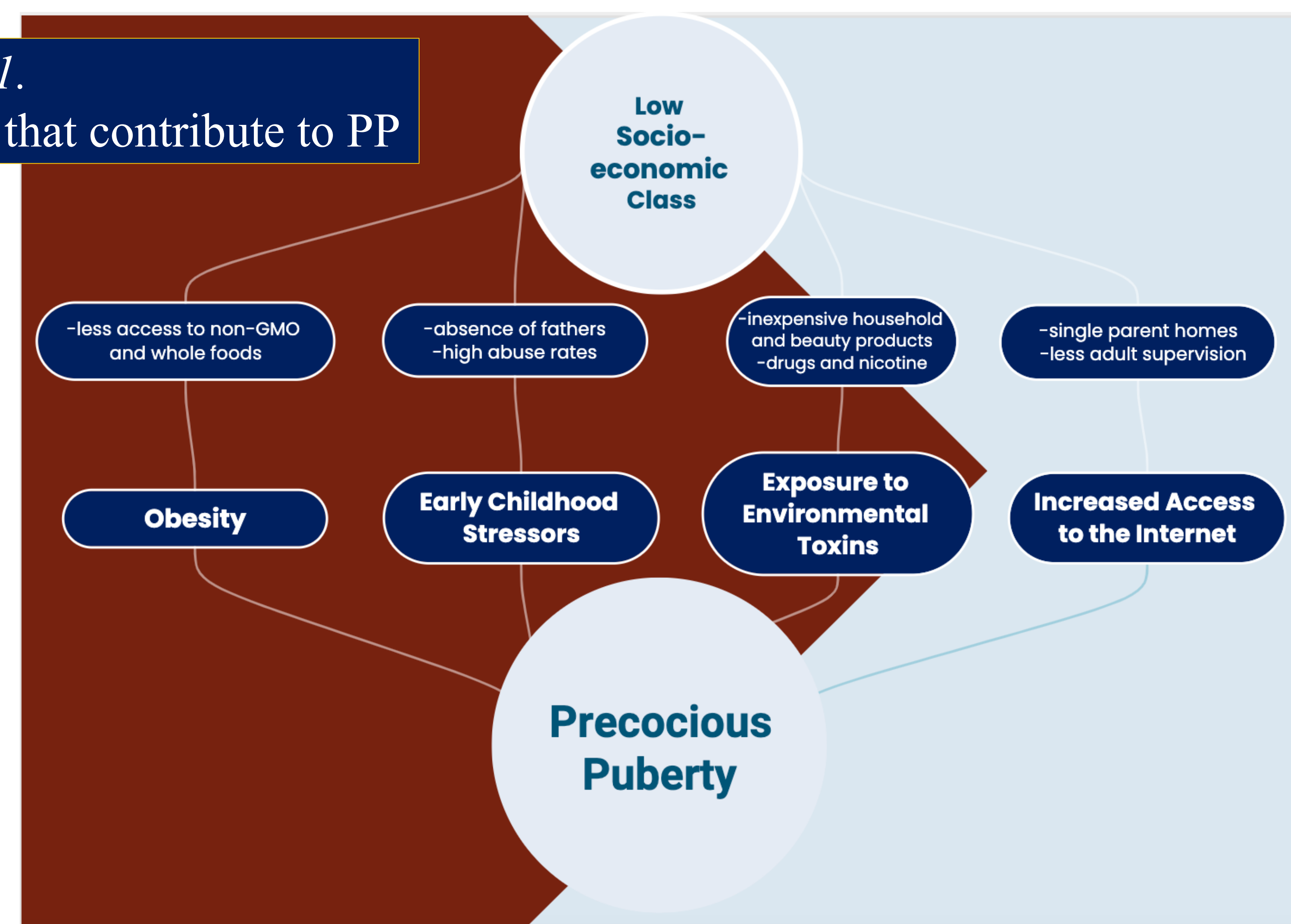
• **Inclusion Criteria**

- Articles that focused on P.P.
- Articles in English
- Publications within the last 10 years

• **Number of articles reviewed**

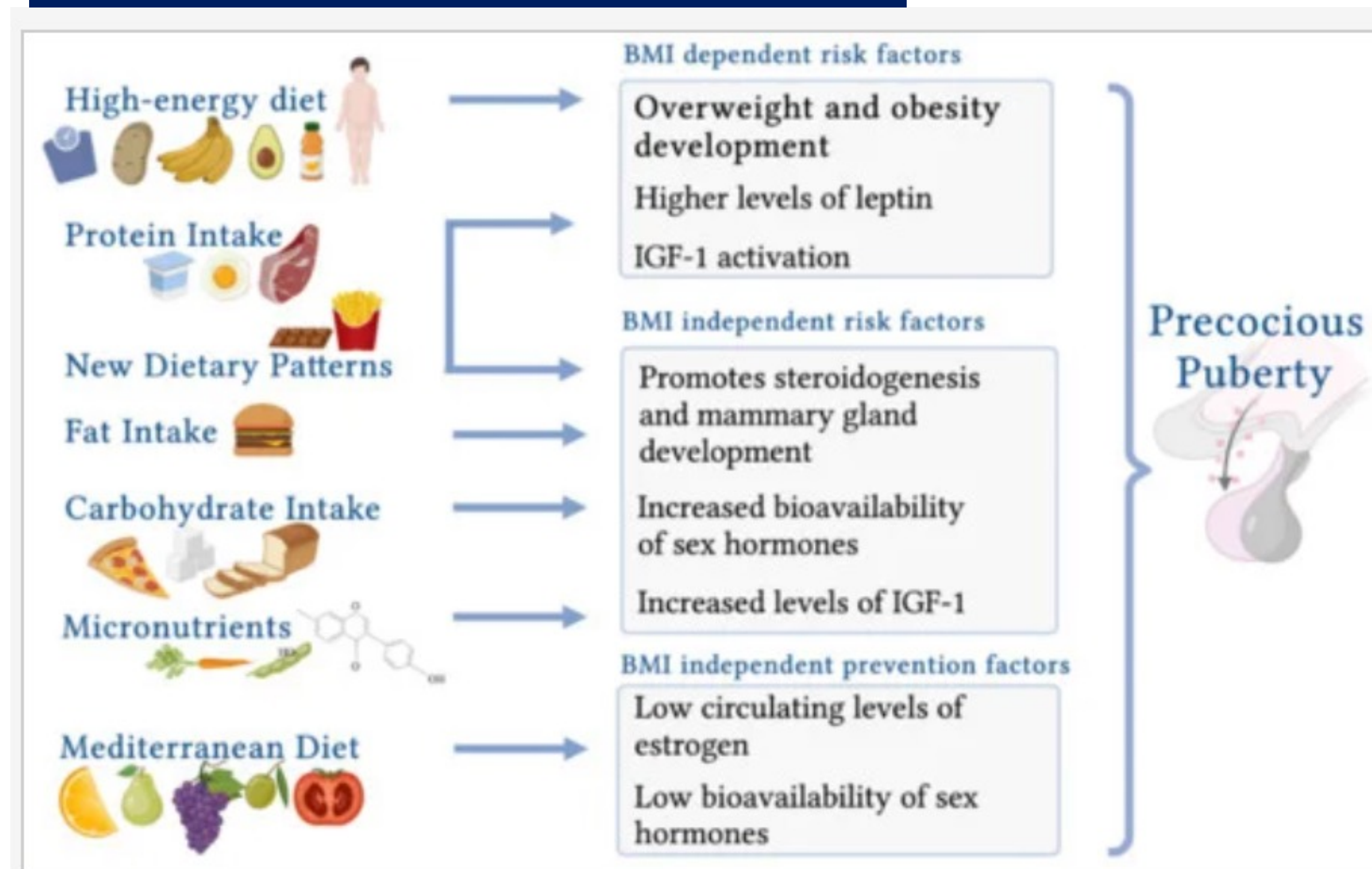
- 152 articles were reviewed
- 25 met the inclusion criteria

**Figure 1.**  
Factors that contribute to PP



Note. Created by Emily Etterman

**Figure 2.**  
BMI-dependent risk factors for PP



Note. From "BMI-dependent risk factors for PP" by Calaterra et al., retrieved from <https://doi.org/10.3390/ijfc11121353>

**Figure 3.**  
The Tanner Stages

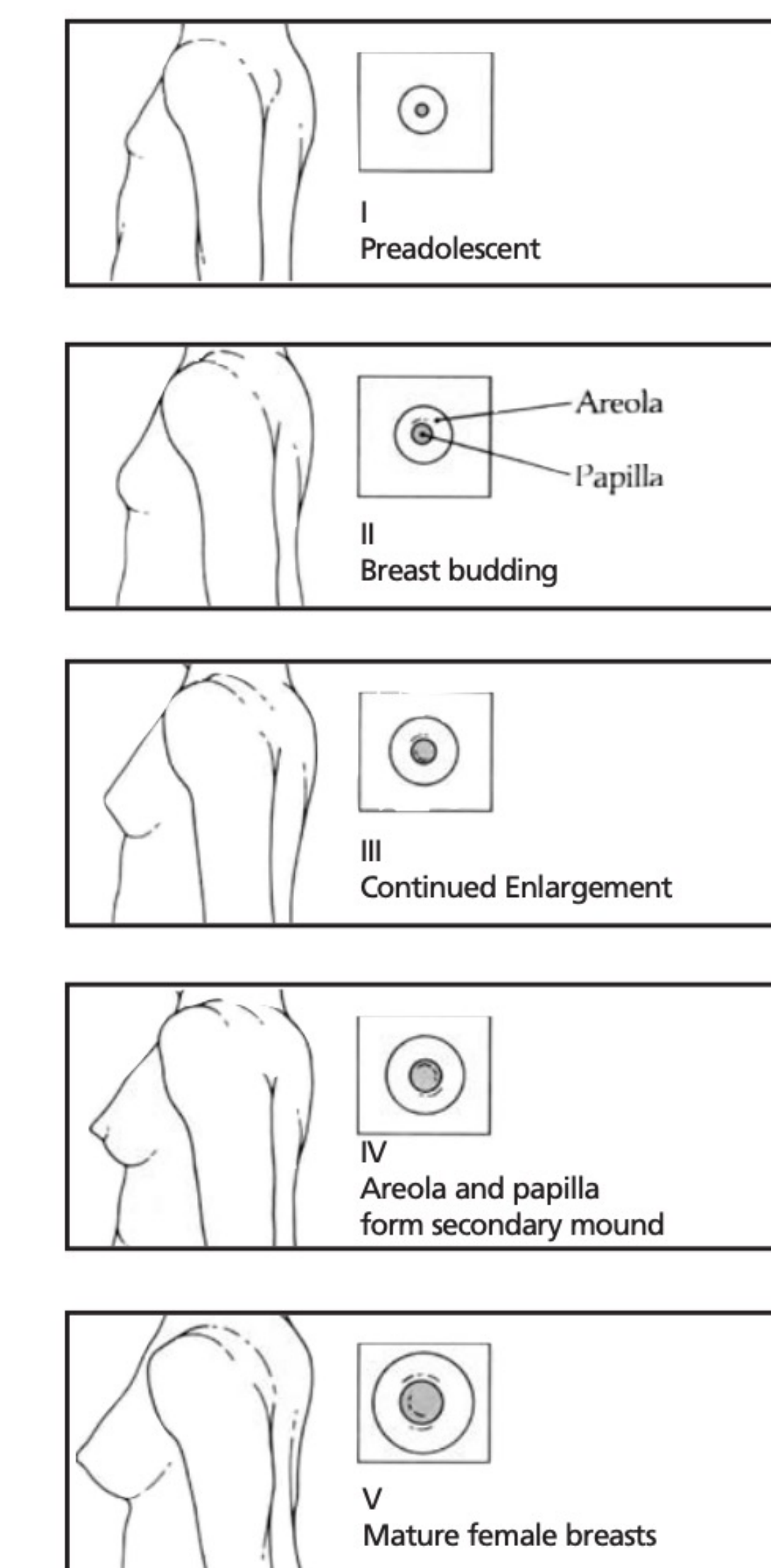


Fig. 9-24, C

- **Stage I (Preadolescent)** - Only the papilla is elevated above the level of the chest wall.
- **Stage II - (Breast Budding)** - Elevation of the breasts and papillae may occur as small mounds along with some increased diameter of the areolae.
- **Stage III** - The breasts and areolae continue to enlarge, although they show no separation of contour.
- **Stage IV** - The areolae and papillae elevate above the level of the breasts and form secondary mounds with further development of the overall breast tissue.
- **Stage V** - Mature female breasts have developed. The papillae may extend slightly above the contour of the breasts as the result of the recession of the areolae.

Note: From "The Tanner stages" by Libby Medical School, retrieved from [https://www.medicalbook.info/medical\\_education/undergraduate/SPM\\_109/doi/10.1007/s11356-018-1567-4](https://www.medicalbook.info/medical_education/undergraduate/SPM_109/doi/10.1007/s11356-018-1567-4)

## Results & Solutions

### Results

• **Several factors contribute to PP**

- Obesity:** incidence of obesity lasting longer than 2 years, increases the risk of PP
- Early Childhood Stressors:** the highest correlation is a father's absence and a combination of multiple adversities in a family
- Environmental Exposures:** diethyl hexyl phthalate metabolites in girls with precocious puberty were significantly higher than those in the control groups in several reviewed studies
  - diethyl hexyl is found in microplastics
- Increased Access to the Internet:** 35-46% of adolescents are at risk of using the internet in excess and seeing mature subjects that should not be known as a child
- Socioeconomic class:** low socioeconomic status encapsulates all found contributing factors and is the strongest indicator for PP

**Implications for Nursing Practice:**

- Support for the children with PP through education
- Be knowledgeable in treatment and management
- Able to identify at-risk populations

**Implications for Family, Child, and School Preparation:**

- Families should seek education on how to best support their children in order that their child can flourish to their greatest potential.
- Children should have readily available sources that are age appropriate to help prepare and educate them.
- The school nurse should be educated on PP so that she can help support the children and help them succeed during this time in their lives.

## Gaps & Future Research

**Gaps in the Literature:**

- The sources and literature found were from a wide range of years so some of the literature reviewed could be less applicable today.
- There was no specific screening or tracking of children during the at-risk age of PP.

**Future Research:**

- Longitudinal studies, specifically in an at-risk community such as one with a low socioeconomic class to determine stronger correlations with risk factors
- The incidence of mental health issues in relation to PP
- Fertility in girls with PP

## References

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(Additional Reference is available)