

# Adult Acne Often Comedonal, Tied to Smoking

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Among adult females with acne, 85% have large and small comedones, with few inflammatory lesions, a study has shown.

The finding goes against the commonly held belief that postadolescent acne is more often associated with inflammatory papules and pustular lesions, suggesting that “the commonly accepted model for postadolescent female acne should be critically revised for important academic, pathogenetic, and therapeutic reasons,” according to study investigators.

Cigarette smoking was also found to be strongly correlated with the comedonal form of acne, and not the inflammatory, papulopustular type.

**VITALS**  
**Major Finding:** Out of the study patients, 85% had CPPA.  
**Data Source:** Postadolescent women (226) with acne, aged 25-50 years, seen at a clinic by three dermatologists.  
**Disclosures:** The authors reported having no conflicts of interest.

According to the investigators, led by Dr. Bruno Capitanio of the pediatric dermatology department at the San Gallicano Institute in Rome, postadolescent acne had previously been considered a “predominantly inflammatory, mild to moderate form, characterized by papules and pustules, mainly located on the lower third of the face, jawline, and neck, with rare and not prominent comedonal lesions.”

The authors classified this type as “papulopustular postadolescent acne,” or PPAA.

“However, we have previously reported a frequent clinical form characterized by a predominance of retention lesions (microcomedones and macrocomedones) with few inflammatory lesions,” which the investigators call “comedonal postadolescent acne,” or CPAA.

For the current study, Dr. Capitanio and his colleagues sought to characterize the prevalence and severity of PPAA and CPAA among a group of 226 postadolescent women with acne, aged 25-50 years, seen at his clinic by three dermatologists (J. Am. Acad. Dermatol. 2010 July 7 [doi:10.1016/j.jaad.2009.11.021]).

All patients were classified as either nonsmokers (patients who had quit smoking more than 5 years before the study) or current smokers (patients who had quit smoking within 6 months prior to the study).

In total, 85% (192) of the study patients had CPAA.

The authors also found that smoking was strongly correlated with the more predominant, CPAA form. Of the 150 patients in the study who smoked, 93% (140) were CPAA patients, accounting for nearly 73% of the total CPAA cohort.

In contrast, the 10 remaining smokers,

who had PPAA, represented just under 30% of that group.

Additionally, “a positive correlation was found between number of daily cigarettes and CPAA severity,” wrote Dr. Capitanio and his associates. For example, among the 19 total patients in the study who reported smoking more than 20 cigarettes per day, 11 had what the authors characterized as “severe” CPAA, with cysts greater than 3 mm in diameter spread over

the entire face, and the presence of “ice-pick” scarring lending a “crater effect.”

Seven of the heavy smokers (more than 20 cigarettes per day) had mild to moderate CPAA; the remaining one patient had PPAA.

The authors postulated that one reason for the discrepancy between their data and previous findings about postadolescent acne may be because prior studies have “been mainly conducted on

Nordic (in particular Anglo-Saxon) populations, presumably (even if not specified) characterized by a predominance of fair skin type and by a low-grade ultraviolet exposure.” This study was of women of Mediterranean descent.

The authors conceded that the study did not take into account patients’ stress levels, sleep, milk intake, or consumption of foods with high glycemic indices, “but they will be included in future studies.” ■

## If you think all basal insulins are the same, think again

The topic of insulin and cancer has garnered increased attention with the publication of 4 retrospective studies in *Diabetologia* that investigate the potential role of a specific basal insulin analog in cancer risk.<sup>1-4</sup>

For decades, researchers have investigated the relationship between insulin and IGF-1 receptor activation and the development of certain cancers.<sup>5</sup> To date, the clinical significance of the in vitro activity of IGF-1R has not been established.

### The Novo Nordisk philosophy of engineering insulin and IGF-1R affinity

Novo Nordisk has been working on refining the attributes of insulin for more than 85 years, redesigning the insulin molecule with a focus on efficacy and safety.

We have developed insulin analogs that work like normal human insulin but which have a more consistent and predictable absorption profile associated with a low risk of hypoglycemia, the most common adverse event with insulin use.<sup>6-8</sup>

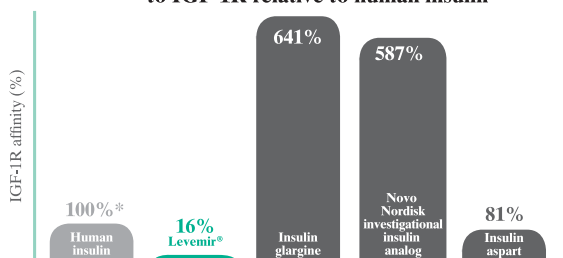
In 1992, Novo Nordisk stopped development of a rapid-acting investigational insulin analog when laboratory testing revealed it had undesirable mitogenic side-effects.<sup>9</sup> A toxicopharmacological evaluation indicated the compound’s affinity to IGF-1R was high, one possible cause of the tumor growth.<sup>9</sup>

With work on this investigational compound discontinued, Novo Nordisk adopted a philosophy that all future insulins cannot have a greater binding affinity to IGF-1R and the insulin receptor (IR) than human insulin, the relevant comparator against which binding affinity is measured.<sup>9</sup>

### Levemir® was designed with a low affinity to IGF-1R

Levemir® was designed with the lessons of the earlier investigational insulin analog in mind, with a specific fatty acid side chain to LysB29 to prolong its absorption and provide steady plasma levels while also having a lower IGF-1R affinity than human insulin.<sup>10</sup>

#### Levemir® was shown to have a low affinity to IGF-1R relative to human insulin<sup>10</sup>



\*Human insulin is the relevant comparator against which IGF-1R affinity was measured.

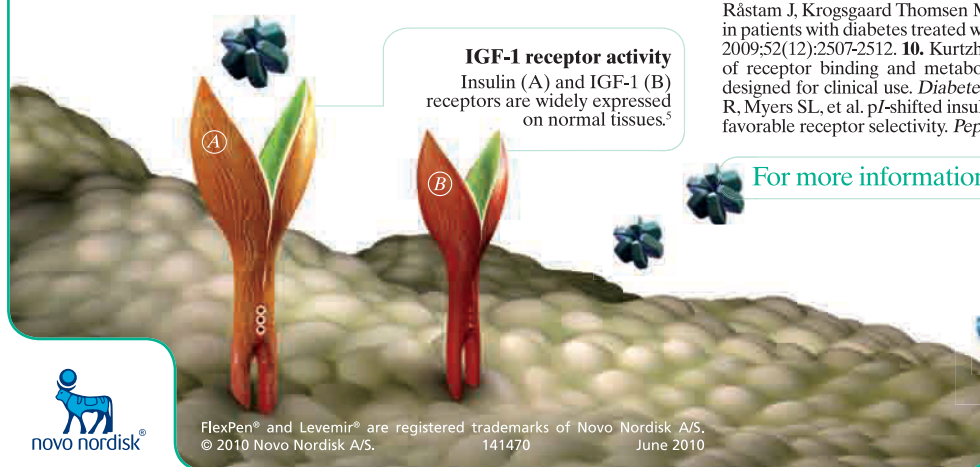
An in vitro study that compared the insulin- and IGF-1R-binding properties and the metabolic and mitogenic potencies of the rapid-acting and long-acting insulin analogs with human insulin. IGF-1R affinity was measured using purified human IGF-1R.<sup>10</sup>

In another study, conducted by Lilly Research Laboratories, insulin glargine had an affinity to IGF-1R of 551% compared with 100% for human insulin.<sup>11</sup>

The clinical significance of the in vitro activity of IGF-1R has not been established.

#### IGF-1 receptor activity

Insulin (A) and IGF-1 (B) receptors are widely expressed on normal tissues.<sup>5</sup>



## Indications and usage

Levemir® is indicated for once- or twice-daily subcutaneous administration for the treatment of adult and pediatric patients with type 1 diabetes mellitus or adult patients with type 2 diabetes mellitus who require basal (long-acting) insulin for the control of hyperglycemia.

## Important safety information

Levemir® is contraindicated in patients hypersensitive to insulin detemir or one of its excipients.

**Levemir® should not be diluted or mixed with any other insulin preparations.**

**Hypoglycemia is the most common adverse effect of all insulin therapies, including Levemir®. As with other insulins, the timing of hypoglycemic events may differ among various insulin preparations. Glucose monitoring is recommended for all patients with diabetes. Levemir® is not to be used in insulin infusion pumps. Any change of insulin dose should be made cautiously and only under medical supervision. Concomitant oral antidiabetes treatment may require adjustment.**

**Needles and Levemir® FlexPen® must not be shared.**

Inadequate dosing or discontinuation of treatment may lead to hyperglycemia and, in patients with type 1 diabetes, diabetic ketoacidosis. Insulin may cause sodium retention and edema, particularly if previously poor metabolic control is improved by intensified insulin therapy. Dose and timing of administration may need to be adjusted to reduce the risk of hypoglycemia in patients being switched to Levemir® from other intermediate or long-acting insulin preparations. The dose of Levemir® may need to be adjusted in patients with renal or hepatic impairment.

Other adverse events commonly associated with insulin therapy may include injection site reactions (on average, 3% to 4% of patients in clinical trials) such as lipodystrophy, redness, pain, itching, hives, swelling, and inflammation. Less common but more serious are severe cases of generalized allergy, including anaphylactic reaction, which may be life threatening.

Please see brief summary of Prescribing Information on adjacent page.

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For more information, visit [www.IGF1Raffinity.com](http://www.IGF1Raffinity.com)



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insulin detemir (rDNA origin) injection