

# CLICK vs CLICK<sup>+</sup>: a comparative statistical evaluation

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**“Numbers don’t lie, but they can shed light.”**

By Professor Giuseppe Lipani

## Introduction

**BlancOne® CLICK** tooth whitening has been an authentic revolution in the field of cosmetic dentistry, by making professional tooth whitening easy to access, fast, effective and without side effects. Introduced by IDS S.p.A. in 2016, BlancOne® CLICK has transformed the approach to tooth whitening, by **offering an innovative solution that succeeded in winning over both the industry professionals and the patients, guaranteeing a 4 shades brighter smile in just 10 minutes.**

Even though BlancOne Click® represents the leading product –**with more than 2 million treatments performed**– and it’s constantly showing signs of a steady growth in terms of sales and popularity both in Italy and abroad, since 2016 –the release year of the first formulation– BlancOne researchers have worked to improve its formulation making it the highest-performing product of all time and, after 9 years of constant research, they have developed **Click+, the newest version, with a formulation that uses LIGHTSPEED3.0\* (1) and TOOTH REJUVENATION\*(2) technologies. The formulation, enriched with vitamin D and K, promotes the growth of nano hydroxyapatite on the enamel surface acting both as a remineralizing and whitening agent, improving the teeth brightness for a bio-camouflage effect.**

The purpose of this study is to compare the performance of CLICK –with its original formulation– with that of its new version, CLICK<sup>+</sup>, with post-hygiene whitening treatments. **By means of the statistical analysis of two independent samples, we intend to determine whether the differences observed are significant from a statistical and clinical point of view. The comparison is backed up by a detailed analysis of means, medians, modes and distributions.**

### CLICK SAMPLE (OLD FORMULATION):

- **Number of observations: 40,000**
- **Mean: 4.00**
- Standard Deviation: 4.00
- Mode: 3
- Median: between 4 and 5

### CLICK+ SAMPLE:

- **Number of observations: 48**
- **Mean: 6.50**
- Standard Deviation: 2.00
- Mode: 6
- Median: 6

## Materials and Methods

The data come from BlancOne centres using the BlancOne PRO app, with over 40,000 data collected for the old CLICK formulation and 48 treatments performed during the Cologne IDS 2025 fair for the CLICK+. The data were collected through a comparative technique and the aid of the Bleached Guide 3D Master VITA. **The stark difference in numbers justifies the use of Welch's t-test, which does not adopt equal variances and handles disproportionate samples correctly.**

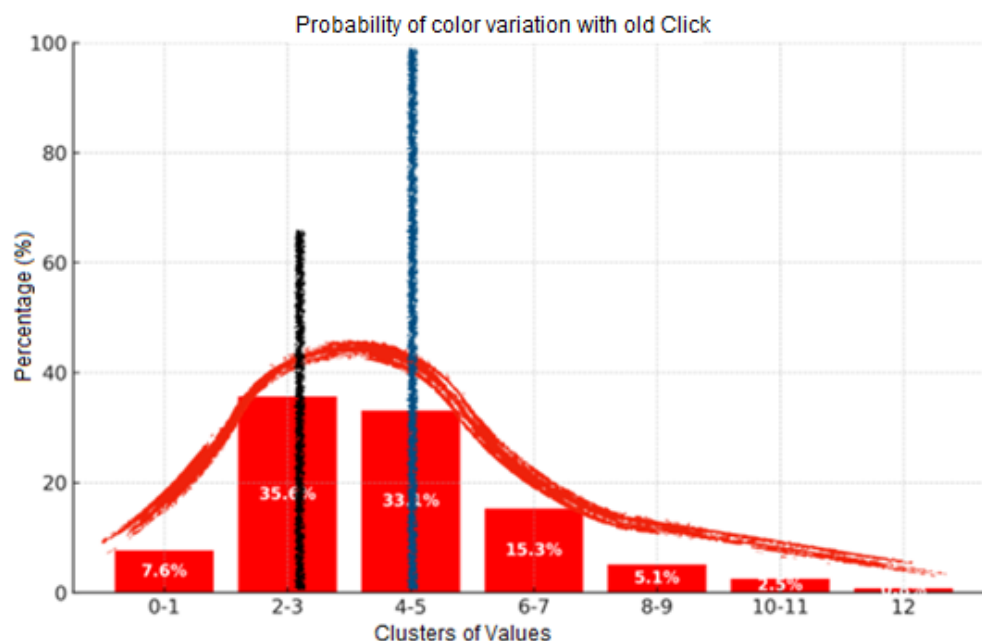
## Results

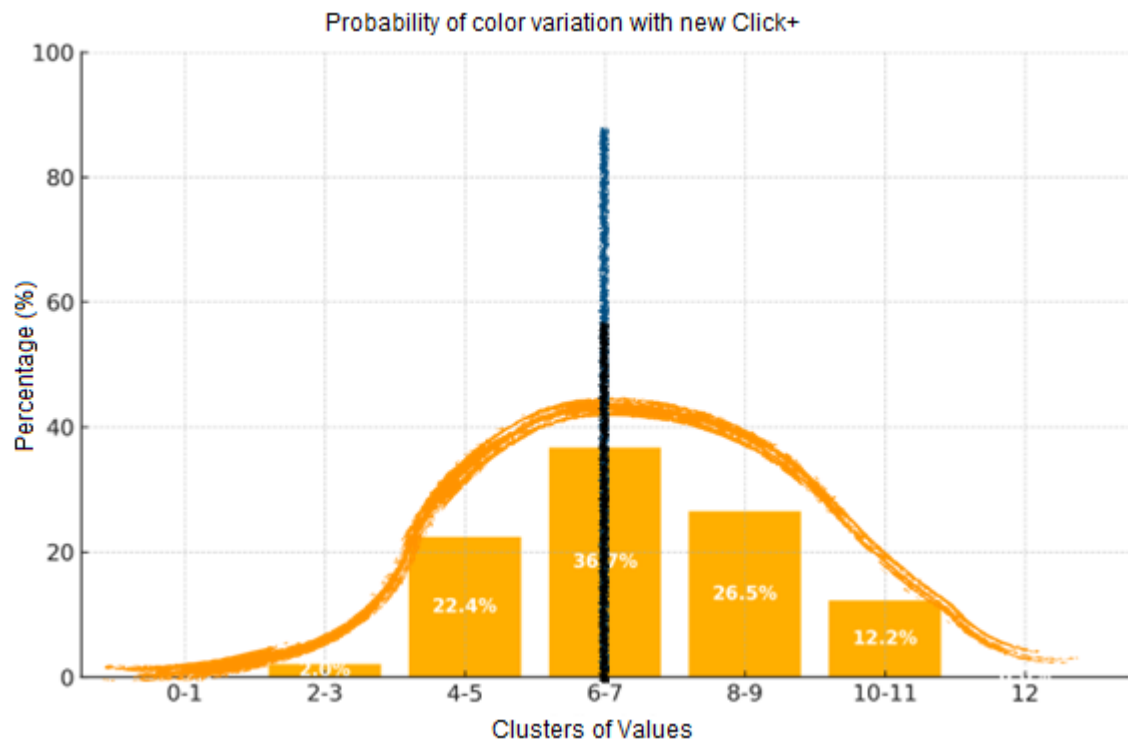
Welch's t-test produced a t-value of  $-8.64$  with about 47 degrees of freedom and a p-value of  $2.66 \times 10^{-11}$ , revealing an important difference between the two means. The 95% confidence interval for the mean difference (2.5 points) ranges from  $+1.92$  to  $+3.08$ .

**In practical terms, this means that patients treated with CLICK+ showed an average additional improvement of almost 2.5 points compared to those treated with the old formulation.** This increase is also backed up by a higher mode and median, a sign of a distribution leaning towards higher values.

**The calculated Cohen effect** is equal to circa 0.79 and classified as medium-large. This is not only **confirming** the statistical significance, but it is also strengthening the clinical and operational impact of the new formulation. **CLICK+ is therefore not only "better" under a statistical point of view, but it is also more effective in actual terms with regards to fast, post-hygiene whitening treatments.**

## Graphical Analysis

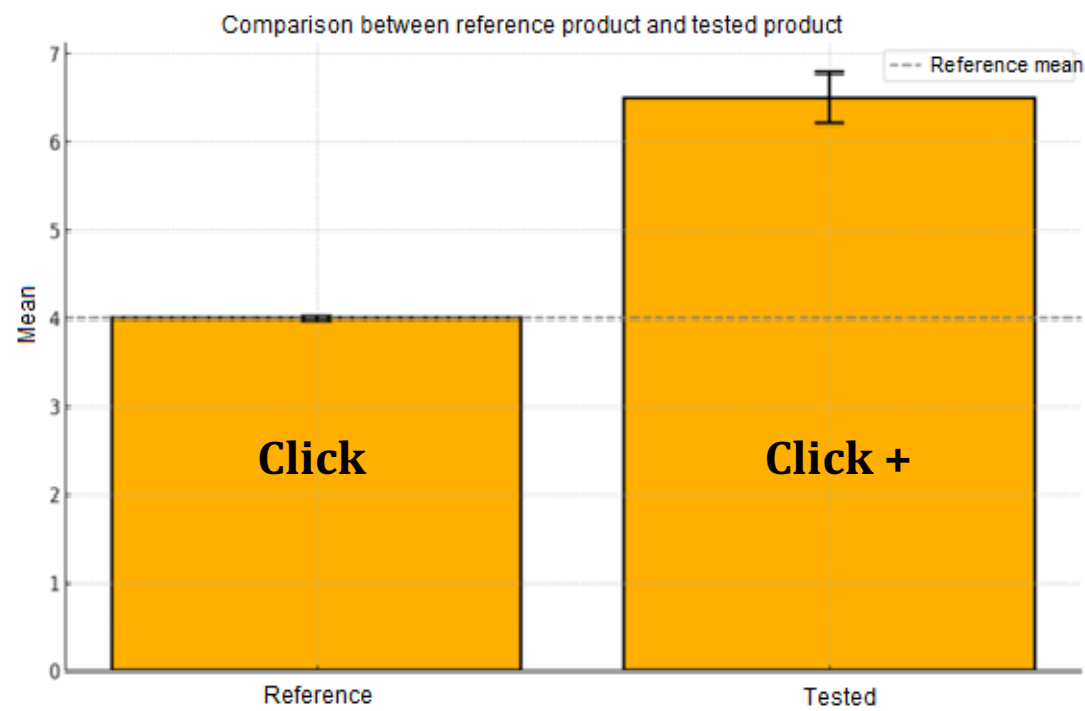
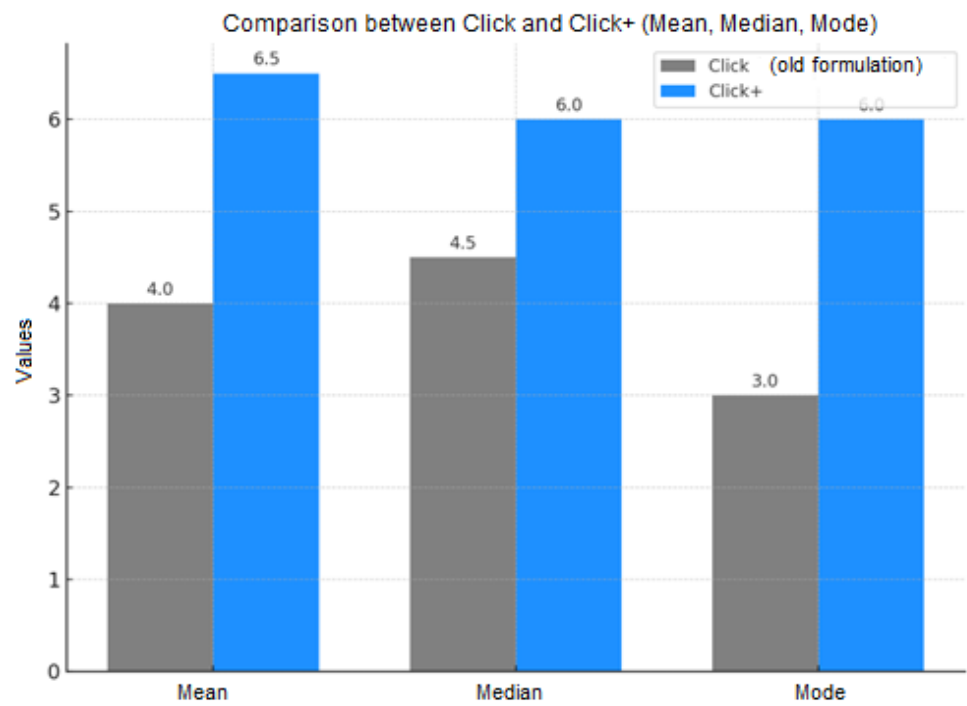




**The variation probability chart with CLICK**, mean and median in blue, mode in black. These values are defined as centrality indices and are the ultimate synthesis tool, able to summarise information about an identified event/variable. The **Median** indicates the number in the central position together with a group of numbers and with regards to which half of the numbers is of a higher value and the other half of a lower one. The **Mean** consists in the ratio between the total of the numeric data and the amount of data. The **Mode** which stands around 2-3 indicates the colour increasing value repeated more often, the mean and median, instead, correspond to a 4-tone increase with a distribution more oriented to low increasing values.

In the **Probability of colour variation with CLICK+ chart** mode, mean and median coincide at the value 6-7 showing a more even distribution with a trend towards higher colour variation probability values.

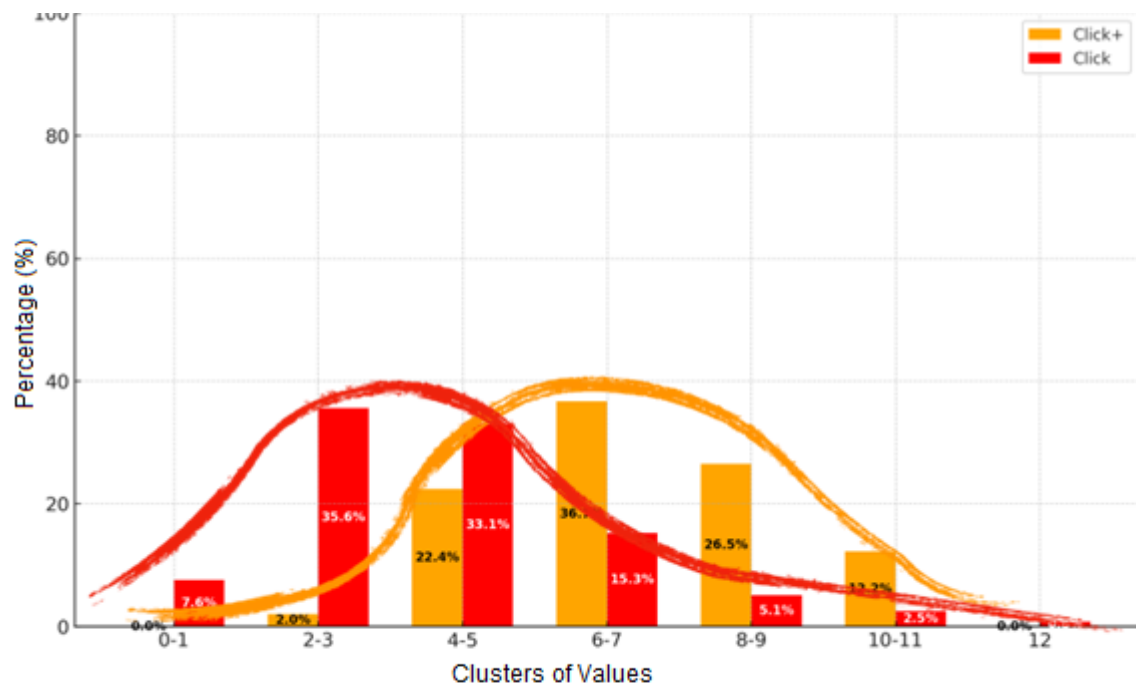
Below, a **comparative chart between CLICK and CLICK+ in terms of mean, median and mode.**





This chart **compares the means of the two samples** with the relevant mean standard error, i.e. how much the mean of a sample can differ from the actual mean of the population. In this case the standard error, highlighted by the curves, underlines how low that is despite the fact that the sample is numerically contained and showing a **95% confidence interval for the difference between means (2.5 points) falling between +1.92 and +3.08**.

The following chart **compares the two distributions in terms of colour improvement probability**.



This last chart shows two regular distribution curves (also called “bell curves”), representing the **distribution of the results** obtained with the two formulations of the product:

The horizontal axis represents the **standardised values** (z-score), while the vertical axis indicates **probability density**, namely the concentration of values around the means.

The Cohen effect ( $d = 0.79$ ) indicates how distant from each other the two distributions are in terms of standard deviations. A value equal to **0.79 is considered as a “medium-large” effect**, therefore:

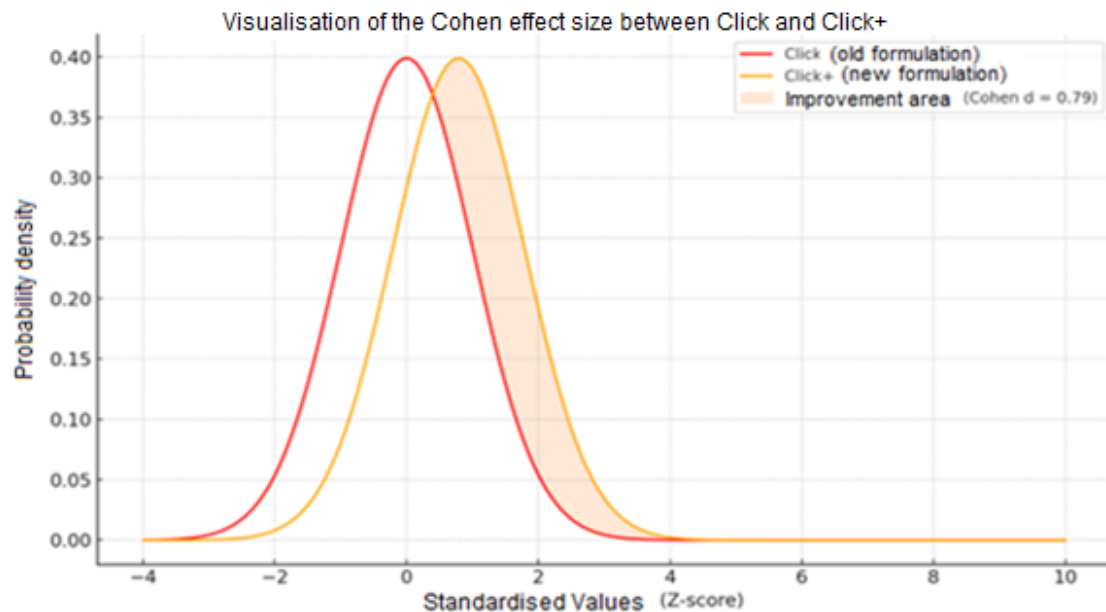
- The two curves are **quite separated**, with **little juxtaposition**,
- This means that **Click+ not only has a higher mean, but also a higher probability of obtaining better results in a consistent way**.

The peach-coloured area (peachpuff) represents the **difference between the two curves**, namely **“improvement zone”** where CLICK+ is **more effective** compared to the original formulation.

The new formulation has moved the results distribution to the right, therefore to **better values**. The Cohen indicates just this distance, allowing us to confirm not only *that* CLICK+

is better, but also **how much**. The chart visually reinforces what the statistical analysis has already shown in numerical terms:

- Click+ offers a real and measurable improvement.
- The effect is not only statistically important, but also **clinically significant**.
- This is particularly important for a product that promises fast results, as in the case of a post-hygiene whitening treatment.



## Performance Analysis of Click and Click+ samples

This analysis compares two samples defined as 'Click' and 'Click+'. The aim is to estimate the percentage of improvement between the two, including also a confidence interval.

### Starting data

- Mean of Click sample: 4
- Mean of Click+ sample: 6.5
- Confidence interval on the difference (Click+ - Click): [1.92 ; 3.08]

### **Calculation of Percentage of Improvement**

The formula used to calculate the percentage of improvement is:

$$\text{Improvement \%} = ((\text{Click+ Mean} - \text{Click Mean}) / \text{Click Mean}) \times 100$$

By applying the following values:

$$((6.5 - 4) / 4) \times 100 = (2.5 / 4) \times 100 = \mathbf{62.5\%}$$

### **Confidence Interval of the Percentage of Improvement**

By applying the same formula to the confidence interval limits on the difference between means:

- Lower limit:  $(1.92 / 4) \times 100 = \mathbf{48\%}$
- Upper limit:  $(3.08 / 4) \times 100 = \mathbf{77\%}$

**THE ESTIMATED PERCENTAGE OF IMPROVEMENT OF THE CLICK+ SAMPLE COMPARED TO THE CLICK SAMPLE IS EQUAL TO 62.5%, WITH A CONFIDENCE INTERVAL BETWEEN 48% AND 77%.**

### **Clinical Annotations**

The **CLICK+** product proved to be safe, easy to apply and remove. IN ALL 48 TREATMENTS PERFORMED FOLLOWING THE MANUFACTURER'S INDICATIONS, NONE OF THE PATIENTS OBSERVED SENSITIVITY OR INCONVENIENCES DURING THE POST-TREATMENT PHASE. In 4 cases, a slight and completely asymptomatic whitening of the exposed gum happened when activating the gel with the BlancOne ARCUS lamp. This is due to the reaction of the peroxide with a little bit of blood, a residue from the post-hygiene session.

## Case Reports







## Conclusions

Data clearly show that **CLICK<sup>+</sup>** represents an important progress compared to the previous formulation. The increased effectiveness is not only visible, but also statistically proved. The decreased variability of results, in combination with higher central values, suggests a more stable and satisfactory performance.

**Therefore, CLICK<sup>+</sup> allows a noticeable and faster improvement, in line with modern clinical requirements with an improved stability of result over time.**

\*(1) The third generation of LightSpeed technology has reached a never-seen-before effectiveness. By being irradiated by the powerful ARCUS lamp, the new BlancOne® photo-booster are overexcited by photons, accumulating even more energy to separate the hydrogen peroxide.

Besides free radicals released by traditional whitening systems, LightSpeed technology produces singlet oxygen, an atomic, non-radical, form of oxygen, for a much faster, deeper and safer whitening action that will continue up to 72 hours.

Hydrogen peroxide takes 45 minutes to release its maximum oxidising power, where carbamide peroxide needs 4 hours. BlancOne® photochemical gels work in just a few minutes, preventing enamel aggression and dehydration and dental sensitivity.

\*(2) Tooth Rejuvenation technology uses a synergical mechanism in which the oxidative action of the peroxide activates a vitamin booster able to generate an extraordinary regenerative environment which greatly amplifies the effectiveness of the hydroxyapatite nanoparticles.

Tooth Rejuvenation technology activates Ca, P ions and mineral nano particles stimulating a process of forced deposition and adhesion at ionic level to the dental structure, producing an incredibly protective, restoring and desensitizing action, further contributing to dental brightness thanks to the bio-camouflage of hydroxyapatite.