

# Benefits of chewing gum as a dosage format

Consumers face several options in today's marketplace for taking over-the-counter (OTC) and nutritional products. The list includes tablets, capsules, sachets, gummies, chews, lozenges and sprays, to name just a few. However, consumers may fail to comply with their treatment and health regimens because of lack of trust in its effectiveness, concerns about potential side effects or general aversion to the specific dosage format.

Chewing gum is one of the preferred formats in the confectionery market. Evenmore, its use for therapeutic purposes has grown in

popularity. In the 1980s, gum became a popular product for nicotine replacement therapy. Today, new formulations and technologies have been brought to the OTC and nutritional market in a wide range of applications for consumer healthcare such as digestive health, oral health, multivitamins among others.

This document presents the benefits that chewing gum as a delivery system offers to consumers and pharmaceutical and supplement companies untapping business opportunities for product launches and line extensions.

## Consumers like chewing gum:

- ✔ It is a popular confectionery product. The global chewing gum market is forecasted to reach USD 22.27 billion by 2024<sup>1</sup>, while the global functional chewing gum market is expected to reach USD 2.2billion by 2023 with a CAGR of close to 4% in the forecast period<sup>2</sup>.
- ✔ It freshens breath instantly by moistening and refreshing the mouth and throat.
- ✔ It is a convenient and discreet dosage form as it can be consumed anywhere, at any time an without water. It has a pleasant taste thanks to taste masking technologies that can be applied with a wide range of flavors, targeting specific market groups e.g. by age or culture.
- ✔ It is considered an enjoyable delivery because it provides consumers with a pleasurable experience that stimulates the senses.



## Chewing gum is good for consumers:

- ✔ It promotes higher compliance<sup>3</sup> as it is considered easy, pleasurable and convenient by consumers.
- ✔ Chewing gum offers a better alternative for people experiencing difficulties swallowing pills or tablets.
- ✔ Chewing gum increases levels of focus and concentration because of the repetitive act of chewing increases the heart rate and aids concentration<sup>4</sup>.
- ✔ Counteracts dry mouth or xerostomia through stimulation of the salivary secretion.
- ✔ Chewing gum relieves stress through reducing excessive muscular tension and energy via masticatory movements<sup>5</sup>.
- ✔ Helps support healthy lifestyle with only few calories per serving. It can be used as a between-meal snack alternative to higher calories foods<sup>4</sup>.
- ✔ Prevent tooth decay in some cases as it increases the flow of saliva in the mouth, neutralizing and washing away the acids produced when food is broken down by the bacteria<sup>6</sup>. The American Dental Association (ADA) even suggests chewing sugarless gum after meals to help prevent tooth decay.

# Chewing Gum is an efficient delivery system:

- ✔ It provides an efficient delivery of active pharmaceutical and functional ingredients, as they are released into the oral cavity whilst chewing. Depending on the nature of the active ingredients, these can be rapidly absorbed through the buccal mucosa or through the gastrointestinal tract. Active ingredients can even be targeted to serve either locally, e.g. for treatment of mouth sores or systemic delivery after absorption through the buccal mucosa<sup>6</sup>.
- ✔ Chewing gum supports a safe delivery of active substances because these are released during chewing and dissolved in saliva. The release rate can be carefully controlled through the formulation of the gum—allowing extended exposure in the oral cavity. Actives absorbed directly via the buccal membrane avoid metabolism in the gastrointestinal tract and reduce the chance of the liver's first pass effect. As a result, drug formulation as medicated chewing gum may require reduced dosages compared to other oral drug delivery systems<sup>7</sup>.
- ✔ Chewing gum is a versatile delivery technology. There are several methods that can be applied during the manufacturing process, such as melting and compression, which enhances the efficiency of the formulation and can be matched to consumers preferences. Furthermore, in order to mask the unpleasant flavor of the active ingredients, flavoring, sweetening and texture agents can be included in the gum base or coating.
- ✔ Chewing gum can be used in several healthcare applications such as oral care, digestive health, nicotine replacement therapy, energy management and weight management, among many others.
- ✔ Chewing gum as a delivery format has several advantages over traditional oral dosage forms. It is a well-known format that meets consumer needs such as pleasant mouthfeel and convenience. For health companies, chewing gum as a delivery format represents an excellent opportunity for line extensions because its efficiency, versatility and consumer acceptance.



## References

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# Your one-stop-shop for innovative dosage formats



Fertin Pharma is a Contract Development and Manufacturing organization (CDMO) with Headquarters in Denmark, specialising in innovative oral and intra-oral dosage formats with nutraceutical and pharmaceutical ingredients, aimed to give a pleasurable experience to consumers.



Consumer Insights



Quality control & Assurance



Research & Development



Manufacturing & Packaging



Sensory Optimisation



Intellectual Property



Regulatory & Compliance

## Consumer-friendly technologies

Our versatile dosage formats are designed to provide a convenient and pleasurable intake of pharmaceutical and nutraceutical products. Most consumer healthcare areas and age groups can be targeted based on their needs, preferences and behaviours:

Immune Support · Vitamins and Dietary Supplements · Oral Care · Energy Management · Cough and Cold · Allergy Care · Nicotine Replacement Therapy · Cannabinoid Applications · Digestive Health · Pain Management ...and many others

### ZAPLIQ® CHEWABLE TABLET

The next generation of chewable tablets

- Easy to swallow as a sip of water
- Unique mouthfeel
- Excellent taste-masking properties
- Wide range of flavours, colours, textures and shapes



### COMPRESSED CHEWING GUM

Controlled release of active ingredients

- Allows separation of sensitive actives
- Soft and chewable texture
- Wide range of flavours, colours, textures and shapes
- Excellent taste-masking properties



### POWDER

Provides new mouthfeel experiences. Can be used by mixing in water or directly in the mouth



### EXTRUDED GUM

High quality chewing gum, based on decades of confectionery and pharmaceutical experience



### LOZENGE AND FDT

Fast or slow dissolving compressed tablets for a controlled release



## Why choose Fertin Pharma as your CDMO of innovative dosage formats?



### Heritage

Fertin creates effective products with a pleasant taste and mouthfeel, building on 100 years of history in chewing gum and more than 30 years' pharmaceutical experience.



### Quality

We ensure reliable and consistent quality in every product leaving our facilities. Our manufacturing facilities and standard production routines comply with the rigid cGMP (current Good Manufacturing Practice) and the highest EU standards.



### Proven Track Record

Fertin works with leading global brands as well as store labels. Our products are used by consumers all around the world.



### Innovation & Uniqueness

Fertin products are developed based on consumer insights and protected by a strong portfolio of patents. We have been granted more than 100 patents, including some regarding taste masking and release profiling.