Acetylsalicylic acid, the active ingredient in Aspirin™: more than a century of pain and fever relief

**Leverkusen, 2017**: For generations people have trusted Aspirin™ to take care of their pain safely and effectively. In 1897, the Bayer chemist Dr. Felix Hoffmann became the first scientist to succeed in producing a chemically pure and stable form of acetylsalicylic acid, the active ingredient in Aspirin. This changed the course of treating pain. Aspirin is even effective in treating pain resulting from both tension-type headache and migraine headache.¹

**Pain: A universal challenge**
Pain is an ongoing challenge affecting quality of life for people all over the world.² Examples of mild to moderate pain that can affect everyday lives include headache, toothache, cold-related sore throat, period pain, muscular and joint pain, back pain, minor arthritis pain, and pain associated with the common cold. Headaches, including tension-type headache and migraines, are among the most common symptoms seen by health care providers in general practice and globally may affect about 50% of the adult population.³ Other highly prevalent types of pain that can affect everyday living include low back pain (as many as 1 in 10 people globally),⁴ pain from osteoarthritis (approaching 150 million worldwide),⁵ and toothache (close to 4 billion people in the world who suffer from untreated oral health conditions that cause toothache).⁶

**Acetylsalicylic acid’s effects on pain and fever**
Acetylsalicylic acid influences different steps of the pain process in the body, including development, transmission, processing, and perception.⁷ Pain and fever are often accompanied by inflammation, the result of production of certain substances in the body called prostaglandins.⁸ The mechanism of action of acetylsalicylic acid blocks the production of prostaglandins.⁹ Thus, acetylsalicylic acid relieves pain and fever and is also an anti-inflammatory.¹⁰ ¹¹ ¹² ¹³

Fever is one way the body protects itself from viruses or bacteria. Having a body temperature greater than 37 degrees Celsius (98.6 degrees Fahrenheit) helps the body
fight off infections.\textsuperscript{14} The common cold and influenza are the most common infectious diseases,\textsuperscript{15} affecting millions of people globally. Approximately three to five million people contract influenza during the fall and winter each year.\textsuperscript{16}

By inhibiting prostaglandin synthesis, acetylsalicylic acid not only lowers fever, but people rely on it to relieve their typical flu-like symptoms such as headache, sore throat, and body aches. The relief provided by acetylsalicylic acid plays an important role in the symptomatic treatment of the common cold and flu.

\textbf{Innovations in Aspirin formulations}

Over the years, Aspirin has demonstrated its versatility and innovation through various formulations. These include:

- Granules for oral intake
- Effervescent tablets
- Chewable tablets

A formulation with fast-release micro-active technology allows the medicine to dissolve more quickly, enter the bloodstream faster, and relieve pain twice as fast as previous Aspirin tablets.\textsuperscript{17} \textsuperscript{18}

Additionally, formulations that combine acetylsalicylic acid with other ingredients are available, such as:

- \texttt{Aspirin}\textsuperscript{TM} Complex – a combination of acetylsalicylic acid and pseudoephedrine: Treats symptoms of the common cold such as reducing fever, relieving nasal congestion, and relieving aches and pains.\textsuperscript{19}
- \texttt{Aspirin}\textsuperscript{TM} Plus C – a combination of acetylsalicylic acid and Vitamin C: A pain and common cold product that also contains Vitamin C to strengthen the body’s defenses by supporting immune health.\textsuperscript{16}

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Forward-Looking Statements

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4 http://www.who.int/medicines/areas/priority_medicines/Ch6_12Osteo.pdf.
12 Schroer K and Voelker M. NSAIDs and Aspirin: Recent Advances and Implications for Clinical Management. In A. Lanas (ed.), NSAIDs and Aspirin, doi 10.1007/978-3-319-33889-77.