

ACTIVITIES OF DAILY LIVING (ADL'S) SCALES &

FUNCTIONAL INDEPENDENCE MEASURE (FIM)

❑ The Activities of Daily Living are a series of basic activities performed by individuals on a daily basis necessary for independent living at home or in the community.

❑ The term activities of daily living was first coined by Sidney Katz in 1950.

[1]

❑ ADL is used as an indicator of a person's functional status. The inability to perform ADLs results in the dependence of other individuals or mechanical devices. The inability to accomplish essential activities of daily living may lead to unsafe conditions and poor quality of life.

➤ Vital Health Stat 10. 2012 Dec;(255):1-110.

Summary health statistics for the u.s. Population: national health interview survey, 2011

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- ❑ In 2011, the United States National Health Interview Survey determined that 20.7% of adults aged 85 or older, 7% of those aged 75 to 84, and 3.4% of those aged 65 to 74 needed help with ADLs.[2]

Incidence and risk factors of disability in the elderly: the Rotterdam Study

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- ❑ A study from The Netherlands conducted between 1990 and 1999, examined 1129 persons 55 years and older, who were ADL-disability free at baseline. At a 6-year follow-up, 26.7% showed ADL-disability. The incidence of ADL-disability was higher in women (33.2%) than in men (19.7%). Women had also a higher proportion of severe disability.[3]

- ❑ The incidence rate for ADL-disability was also higher in women than in men in a study from Brazil. They examined persons 60 years and older who had no difficulties in ADL at baseline in 2000 and, again, at follow-up 6 years later. The incidence for women were 42.4/1000 person-years and for men 17.5/1000 person-years.[4]
- ❑ A cohort study from US examined 787 persons living in senior housing facilities with no ADL-disability at baseline. After 2.6 years they found that persons who reported 2.33 hours of physical activity per week had 16% less ADL-disability compared with persons that reported no physical activity.[5]

TYPES OF ADL

- ❑ The activities of daily living are classified into basic ADLs and Instrumental Activities of Daily Living (IADLs).
- ❑ The basic ADLs (BADL) or physical ADLs are those skills required to manage one's basic physical needs, including personal hygiene or grooming, dressing, toileting, transferring or ambulating, and eating.
- ❑ The Instrumental Activities of Daily Living (IADLs) include more complex activities related to the ability to live independently in the community. This would include activities such as e.g., managing finances and medications, food preparation, housekeeping, laundry.

BASIC ADLs

The basic ADL include the following categories:

- Ambulating: The extent of an individual's ability to move from one position to another and walk independently.
- Feeding: The ability of a person to feed oneself.
- Dressing: The ability to select appropriate clothes and to put the clothes on.
- Personal hygiene: The ability to bathe and groom oneself and maintain dental hygiene, nail, and hair care.
- Continence: The ability to control bladder and bowel function
- Toileting: The ability to get to and from the toilet, using it appropriately, and cleaning oneself.

INSTRUMENTAL ADLs

The instrumental ADLs are those that require more complex thinking skills, including organizational skills.

- **Transportation and shopping:** Ability to procure groceries, attend events
Managing transportation, either via driving or by organizing other means of transport.
- **Managing finances:** This includes the ability to pay bills and managing financial assets.
- **Shopping and meal preparation, i.e.,** everything required to get a meal on the table. It also covers shopping for clothing and other items required for daily life.

- Housecleaning and home maintenance. Cleaning kitchens after eating, maintaining living areas reasonably clean and tidy, and keeping up with home maintenance.
- Managing communication with others: The ability to manage telephone and mail.
- Managing medications: Ability to obtain medications and taking them as directed.

Causes for limitations in ADLs

- ❑ Aging is a natural process that may present a decline in the functional status of patients and is a common cause of subsequent loss of ADLs.
- ❑ Musculoskeletal, neurological, circulatory, or sensory conditions can lead to decreased physical function leading to impairment in ADLs.
- ❑ A cognitive or mental decline can also lead to impaired ADL's. Severe cognitive fluctuations in dementia patients have a significant association with impaired engagement in activities of daily living that negatively affect the quality of life.

- ❑ Social isolation can lead to impairment in instrumental activities of daily living.
- ❑ Other factors such as side effects of medications, social isolation, or the patient's home environment can influence the ability to perform ADLs.
- ❑ Hospitalization and acute illnesses have also been associated with a decline in ADLs

MEASUREMENTS OF ADLs

The most frequently used checklists are the Katz Index of Independence in Activities of Daily Living and the Lawton Instrumental Activities of Daily Living (IADL) Scale.

KATZ INDEX OF INDEPENDENCE IN ACTIVITIES OF DAILY LIVING

The Katz scale assesses the basic activities of daily living but does not assess more advanced activities of daily living. The Katz ADL scale is sensitive to changes in declining health status, but its limitations include the limited in its ability to measure small elements of change seen in the rehabilitation of older adults. However, it is very useful in creating a common language about patient function for healthcare providers involved in the overall care and discharge planning.

Katz Index of Independence in Activities of Daily Living

Activities Points (1 or 0)	Independence (1 Point)	Dependence (0 Points)
	NO supervision, direction or personal assistance.	WITH supervision, direction, personal assistance or total care.
BATHING Points: _____	(1 POINT) Bathes self completely or needs help in bathing only a single part of the body such as the back, genital area or disabled extremity.	(0 POINTS) Need help with bathing more than one part of the body, getting in or out of the tub or shower. Requires total bathing
DRESSING Points: _____	(1 POINT) Get clothes from closets and drawers and puts on clothes and outer garments complete with fasteners. May have help tying shoes.	(0 POINTS) Needs help with dressing self or needs to be completely dressed.
TOILETING Points: _____	(1 POINT) Goes to toilet, gets on and off, arranges clothes, cleans genital area without help.	(0 POINTS) Needs help transferring to the toilet, cleaning self or uses bedpan or commode.
TRANSFERRING Points: _____	(1 POINT) Moves in and out of bed or chair unassisted. Mechanical transfer aids are acceptable	(0 POINTS) Needs help in moving from bed to chair or requires a complete transfer.
CONTINENCE Points: _____	(1 POINT) Exercises complete self control over urination and defecation.	(0 POINTS) Is partially or totally incontinent of bowel or bladder
FEEDING Points: _____	(1 POINT) Gets food from plate into mouth without help. Preparation of food may be done by another person.	(0 POINTS) Needs partial or total help with feeding or requires parenteral feeding.
TOTAL POINTS: _____ SCORING: 6 = High (<i>patient independent</i>) 0 = Low (<i>patient very dependent</i>)		

❑ **WHY:** Normal aging changes and health problems frequently show themselves as declines in the functional status of older adults. Decline may place the older adult on a spiral of iatrogenesis leading to further health problems. One of the best ways to evaluate the health status of older adults is through functional assessment which provides objective data that may indicate future decline or improvement in health status.

❑ **TARGET POPULATION:** The instrument is most effectively used among older adults in a variety of care settings, when baseline measurements, taken when the client is well, are compared to periodic or subsequent measures.

❑ The Katz Index of Independence in Activities of Daily Living, commonly referred to as the Katz ADL, is the most appropriate instrument to assess functional status as a measurement of the client's ability to perform activities of daily living independently. Clinicians typically use the tool to detect problems in performing activities of daily living and to plan care accordingly. The Index ranks adequacy of performance in the six functions of bathing, dressing, toileting, transferring, continence, and feeding. Clients are scored yes/no for independence in each of the six functions. A score of 6 indicates full function, 4 indicates moderate impairment, and 2 or less indicates severe functional impairment.

VALIDITY AND RELIABILITY: In the thirty-five years since the instrument has been developed, it has been modified and simplified and different approaches to scoring have been used. However, it has consistently demonstrated its utility in evaluating functional status in the elderly population. Although no formal reliability and validity reports could be found in the literature, the tool is used extensively as a flag signaling functional capabilities of older adults in clinical and home environments.

STRENGTHS AND LIMITATIONS: The Katz ADL Index assesses basic activities of daily living. It does not assess more advanced activities of daily living. Katz developed another scale for instrumental activities of daily living such as heavy housework, shopping, managing finances and telephoning. Although the Katz ADL Index is sensitive to changes in declining health status, it is limited in its ability to measure small increments of change seen in the rehabilitation of older adults. A full comprehensive geriatric assessment should follow when appropriate. The Katz ADL Index is very useful in creating a common language about patient function for all practitioners involved in overall care planning and discharge planning.

LAWTON-BRODY INSTRUMENTAL ACTIVITIES OF DAILY LIVING SCALE (I.A.D.L.)

❑ The Lawton Instrumental Activities of Daily Living (IADL) Scale is used to evaluate independent living skills (Lawton & Brody, 1969). The instrument is most useful for identifying how a person is functioning and identifying improvement or deterioration over time. The scale measures eight domains of function, including food preparation, housekeeping, laundering. Individuals are scored according to their highest level of functioning in that category.

❑ A summary score ranges from 0 (low function, dependent) to 8 (high function, independent). The scale is easy to administer assessment instrument that provides self-reported information about functional skills necessary to live in the community. The limitations of this scale are that it is a self-administered test rather than the actual demonstration of the functional task. This may lead either to over-estimation or under-estimation of the ability to perform the activity.

INSTRUMENTAL ACTIVITIES OF DAILY LIVING SCALE (IADL)

Scoring: For each category, circle the item description that most closely resembles the client's highest functional level (either 0 or 1).

A. Ability to Use Telephone		E. Laundry	
1. Operates telephone on own initiative-looks up and dials numbers, etc.	1	1. Does personal laundry completely	1
2. Dials a few well-known numbers	1	2. Launders small items-rinses stockings, etc.	1
3. Answers telephone but does not dial	1	3. All laundry must be done by others	0
4. Does not use telephone at all	0		
B. Shopping		F. Mode of Transportation	
1. Takes care of all shopping needs independently	1	1. Travels independently on public transportation or drives own car	1
2. Shops independently for small purchases	0	2. Arranges own travel via taxi, but does not otherwise use public transportation	1
3. Needs to be accompanied on any shopping trip	0	3. Travels on public transportation when accompanied by another	1
4. Completely unable to shop	0	4. Travel limited to taxi or automobile with assistance of another	0
		5. Does not travel at all	0
C. Food Preparation		G. Responsibility for Own Medications	
1. Plans, prepares and serves adequate meals independently	1	1. Is responsible for taking medication in correct dosages at correct time	1
2. Prepares adequate meals if supplied with ingredients	0	2. Takes responsibility if medication is prepared in advance in separate dosage	0
3. Heats, serves and prepares meals, or prepares meals, or prepares meals but does not maintain adequate diet	0	3. Is not capable of dispensing own medication	0
4. Needs to have meals prepared and served	0		
D. Housekeeping		H. Ability to Handle Finances	
1. Maintains house alone or with occasional assistance (e.g. "heavy work domestic help")	1	1. Manages financial matters independently (budgets, writes checks, pays rent, bills, goes to bank), collects and keeps track of income	1
2. Performs light daily tasks such as dish washing, bed making	1	2. Manages day-to-day purchases, but needs help with banking, major purchases, etc.	1
3. Performs light daily tasks but cannot maintain acceptable level of cleanliness	1	3. Incapable of handling money	0
4. Needs help with all home maintenance tasks	1		
5. Does not participate in any housekeeping tasks	0		
Score		Score	
Total score			
A summary score ranges from 0 (low function, dependent) to 8 (high function, independent) for women and 0 through 5 for men to avoid potential gender bias.			

WHY: The assessment of functional status is critical when caring for older adults. Normal aging changes, acute illness, worsening chronic illness, and hospitalization can contribute to a decline in the ability to perform tasks necessary to live independently in the community. The information from a functional assessment can provide objective data to assist with targeting individualized rehabilitation needs or to plan for specific in home services such as meal preparation, nursing care, home-maker services, personal care, or continuous supervision. A functional assessment can also assist the clinician to focus on the person's baseline capabilities, facilitating early recognition of changes that may signify a need either for additional resources or for a medical work-up (Gallo, 2006).

TARGET POPULATION: This instrument is intended to be used among older adults, and can be used in community or hospital settings. The instrument is not useful for institutionalized older adults. It can be used as a baseline assessment tool and to compare baseline function to periodic assessments.

❑ The Lawton Instrumental Activities of Daily Living Scale (IADL) is an appropriate instrument to assess independent living skills (Lawton & Brody, 1969). These skills are considered more complex than the basic activities of daily living as measured by the Katz Index of ADLs.

❑ The instrument is most useful for identifying how a person is functioning at the present time, and to identify improvement or deterioration over time. There are eight domains of function measured with the Lawton IADL scale. Women are scored on all 8 areas of function; historically, for men, the areas of food preparation, housekeeping, laundering are excluded. Clients are scored according to their highest level of functioning in that category. A summary score ranges from 0 (low function, dependent) to 8 (high function, independent) for women, and 0 through 5 for men.

VALIDITY AND RELIABILITY: Few studies have been performed to test the Lawton IADL scale psychometric properties. The Lawton IADL Scale was originally tested concurrently with the Physical Self-Maintenance Scale (PSMS). Reliability was established with twelve subjects interviewed by one interviewer with the second rater present but not participating in the interview process. Inter-rater reliability was established at .85.

❑ The validity of the Lawton IADL was tested by determining the correlation of the Lawton IADL with four scales that measured domains of functional status, the Physical Classification (6-point rating of physical health), Mental Status Questionnaire (10-point test of orientation and memory), Behavior and Adjustment rating scales (4-6-point measure of intellectual, person, behavioral and social adjustment), and the PSMS (6-item ADLs). A total of 180 research subjects participated in the study, however, few received all five evaluations. All correlations were significant at the .01 or .05 level. To avoid potential gender bias at the time the instrument was developed, specific items were omitted for men. This assessment instrument is widely used both in research and in clinical practice

STRENGTHS AND LIMITATIONS: The Lawton IADL is an easy to administer assessment instrument that provides self-reported information about functional skills necessary to live in the community. Administration time is 10-15 minutes. Limitations of the instrument can include the self-report or surrogate report method of administration rather than a demonstration of the functional task. This may lead either to over-estimation or under-estimation of ability.

FOLLOW-UP: The identification of new disabilities in these functional domains warrants intervention and further assessment to prevent ongoing decline and to promote safe living conditions for older adults.

Functional Independence Measures (FIM)

A broad based measurement of function, which is used by several rehabilitation centers, is the Functional Independence Measure (FIM), a chart that consists of 18 categories of function (sub grouped under self-care, mobility, locomotion, sphincter control, communication, and social cognition), each scored on a scale from 1 (dependent) to 7 (independent). Overall scores may range from 18 (totally dependent) to 126 (totally independent).

FIM™ - Functional Independence Measure

MOTOR ITEMS

SELF-CARE

1. Eating
2. Grooming
3. Bathing
4. Dressing-upper body
5. Dressing-lower body
6. Toileting

SPHINCTER CONTROL

7. Bladder management
8. Bowel management

MOBILITY / TRANSFER

9. Bed-chair-wheelchair
10. Toilet
11. Tub-shower

LOCOMOTION

12. Walk-wheelchair
13. Stairs

COGNITIVE ITEMS

COMMUNICATION

14. Comprehension
15. Expression

SOCIAL COGNITION

16. Social interaction
17. Problem solving
18. Memory

The diagram illustrates the seven scoring levels of the FIM, arranged vertically within a rounded rectangular frame. On the left side of the frame, the text "SCORING LEVELS" is written vertically. Each level is represented by a box containing a number and a description. A horizontal line is positioned between level 6 and level 5.

SCORING LEVELS	Level	Description
	7	Complete independence
	6	Modified independence
	5	Supervision
	4	Minimal assistance
	3	Moderate assistance
	2	Maximal assistance
	1	Total assistance

FIM™ instrument

LEVELS	7 Complete Independence (Timely, Safely) 6 Modified Independence (Device)	NO HELPER		
	Modified Dependence 5 Supervision (Subject = 100%+) 4 Minimal Assist (Subject = 75%+) 3 Moderate Assist (Subject = 50%+) Complete Dependence 2 Maximal Assist (Subject = 25%+) 1 Total Assist (Subject = less than 25%)	HELPER		

	ADMISSION	DISCHARGE	FOLLOW-UP
Self-Care			
A. Eating	<input type="text"/>	<input type="text"/>	<input type="text"/>
B. Grooming	<input type="text"/>	<input type="text"/>	<input type="text"/>
C. Bathing	<input type="text"/>	<input type="text"/>	<input type="text"/>
D. Dressing - Upper Body	<input type="text"/>	<input type="text"/>	<input type="text"/>
E. Dressing - Lower Body	<input type="text"/>	<input type="text"/>	<input type="text"/>
F. Toileting	<input type="text"/>	<input type="text"/>	<input type="text"/>
Sphincter Control			
G. Bladder Management	<input type="text"/>	<input type="text"/>	<input type="text"/>
H. Bowel Management	<input type="text"/>	<input type="text"/>	<input type="text"/>
Transfers			
I. Bed, Chair, Wheelchair	<input type="text"/>	<input type="text"/>	<input type="text"/>
J. Toilet	<input type="text"/>	<input type="text"/>	<input type="text"/>
K. Tub, Shower	<input type="text"/>	<input type="text"/>	<input type="text"/>
Locomotion			
L. Walk/Wheelchair	<input type="text"/> <input type="text"/> W Walk C Wheelchair B Both	<input type="text"/> <input type="text"/> W Walk C Wheelchair B Both	<input type="text"/> <input type="text"/> W Walk C Wheelchair B Both
M. Stairs	<input type="text"/>	<input type="text"/>	<input type="text"/>
Motor Subtotal Score	<input type="text"/>	<input type="text"/>	<input type="text"/>
Communication			
N. Comprehension	<input type="text"/> <input type="text"/> A Auditory V Visual B Both	<input type="text"/> <input type="text"/> A Auditory V Visual B Both	<input type="text"/> <input type="text"/> A Auditory V Visual B Both
O. Expression	<input type="text"/> <input type="text"/> V Vocal N Nonvocal B Both	<input type="text"/> <input type="text"/> V Vocal N Nonvocal B Both	<input type="text"/> <input type="text"/> V Vocal N Nonvocal B Both
Social Cognition			
P. Social Interaction	<input type="text"/>	<input type="text"/>	<input type="text"/>
Q. Problem Solving	<input type="text"/>	<input type="text"/>	<input type="text"/>
R. Memory	<input type="text"/>	<input type="text"/>	<input type="text"/>
Cognitive Subtotal Score	<input type="text"/>	<input type="text"/>	<input type="text"/>
TOTAL FIM Score	<input type="text"/>	<input type="text"/>	<input type="text"/>

NOTE: Leave no blanks. Enter 1 if patient not testable due to risk

Barthel's Index of Activities of Daily Living (BAI)

- The Barthel Index for activities of daily living was first published in 1965 by Barthel and Mahoney in the Maryland State Medical Journal.
- The scale's purpose is to measure performance and patient independence (or degree of assistance required) with respect to self-care, sphincter management, transfers and locomotion.
- Originally, the index was designed to be used in scoring improvement during rehabilitation of patients with chronic neuromuscular or musculoskeletal disorder and continues to be used so but has also been validated in studies on patient populations with: primary brain tumors and brain metastases.

- ❑ The index should be used as a record of what a patient does, not as a record of what a patient could do.
- ❑ A patient's performance should be established using the best available evidence. Asking the patient, friends/relatives and nurses are the usual sources, but direct observation and common sense are also important. However direct testing is not needed.
- ❑ Usually the patient's performance over the preceding 24-48 hours is important, but occasionally longer periods will be relevant.

- The index consists of 10 items (scored in increments of 5 points) that relate to activities of daily living (ADLs) and is calculated by summing the response value to each of these items.
- The scale has been used extensively in settings for in-patient rehabilitation, to monitor functional changes in individuals having suffered from stroke and predict length of stay, as well as degree of care required.
- Shah reported alpha internal consistency coefficients of 0.87 to 0.92 (admission and discharge). Roy et al. found an inter-rater correlation of 0.99 and with patient self-report, 0.88.

THE BARTHEL INDEX

Patient Name: _____

Rater Name: _____

Date: _____

Activity	Score
FEEDING 0 = unable 5 = needs help cutting, spreading butter, etc., or requires modified diet 10 = independent	_____
BATHING 0 = dependent 5 = independent (or in shower)	_____
GROOMING 0 = needs to help with personal care 5 = independent face/hair/teeth/shaving (implements provided)	_____
DRESSING 0 = dependent 5 = needs help but can do about half unaided 10 = independent (including buttons, zips, laces, etc.)	_____
BOWELS 0 = incontinent (or needs to be given enemas) 5 = occasional accident 10 = continent	_____
BLADDER 0 = incontinent, or catheterized and unable to manage alone 5 = occasional accident 10 = continent	_____
TOILET USE 0 = dependent 5 = needs some help, but can do something alone 10 = independent (on and off, dressing, wiping)	_____
TRANSFERS (BED TO CHAIR AND BACK) 0 = unable, no sitting balance 5 = major help (one or two people, physical), can sit 10 = minor help (verbal or physical) 15 = independent	_____
MOBILITY (ON LEVEL SURFACES) 0 = immobile or < 50 yards 5 = wheelchair independent, including corners, > 50 yards 10 = walks with help of one person (verbal or physical) > 50 yards 15 = independent (but may use any aid; for example, stick) > 50 yards	_____
STAIRS 0 = unable 5 = needs help (verbal, physical, carrying aid) 10 = independent	_____
TOTAL (0-100):	_____

Result interpretation

- The Barthel Index measures functional disability in 10 ADLs by quantifying patient performance. 5-point increments are used in scoring, with a maximal score of 100 indicating full independence in physical functioning whilst a lowest score of 0 indicating a patient with a complete bed-bound state.
- The higher the score following the Barthel Index assessment, the greater the likelihood for the patient to be able to live at home, independently, with varying degrees of help and care, following discharge from hospital.

The Sinoff 1997 Interpretation:

No. of Points	Status
80–100	Independent
60–79	Minimally dependent
40–59	Partially dependent
20–39	Very dependent
<20	Totally dependent

The Shah et al. 1989 Interpretation:

No. of Points	Status
91–99	Slight dependency
61–90	Moderate dependency
21–60	Severe dependency
0–20	Total dependency

Scale limitations

- Concerns about the Barthel Index mostly revolve around its interpretability as there are several versions of the index and scorings available.
- The index is not meant to be used in isolation to predict functional outcomes and should be combined with findings from other parts of clinical examination and functional assessment of the patient..

Modified Barthel Index

Modified Barthel Index extends the original form to 15-items to include eating and drinking (either as separate items [Granger, Albrecht & Hamilton, 1979] or merged together [Fortinsky, Granger & Seltzer, 1981]).

CLINICAL SIGNIFICANCE

- Assessment of ADLs is an important aspect of routine patient assessment and assists healthcare providers in assessing the patient's status, plan, and intervene appropriately. A provider needs to address a patient's general medical condition when determining their level of accomplishing functional capabilities that otherwise ensure independent living and personal care.
- An ADL assessment helps determine whether a patient may require further rehabilitation or assistance at home or if a skilled nursing or long-term care facility would be a safer environment for the patient.

ROLE OF TEAM WORK

- ❑ All interprofessional healthcare team members, including clinicians, nurses, physical therapists, and occupational therapists, should collaborate to assess the functionality of patients before discharge. Patients who are unable to perform activities of daily living may require further rehabilitation or assistance at home.
- ❑ The inability to dress or toilet can lead to poor quality of life.
- ❑ Difficulty in eating independently can lead to poor nutrition, dehydration, and further weakness.

- ❑ Appropriate referrals to OT, PT, and dieticians should be considered.
- ❑ Assessment of functionality should become routine practice for all patients as it can affect people of all ages.
- ❑ An inter professional team communicating and collaborating will provide the best patient evaluation and discharge with good follow-up care.
- ❑ The nursing staff should report to the medical team concerns in regards to patients unable to complete ADLs.
- ❑ The inter professional clinical team assists in directing the nursing home health and social work coordinators to make sure patients receive the care they need. The home health nursing staff needs to provide ongoing monitoring and reporting back to the clinical team should an increase in deficiency of ADLs occur.

➤ SUMMARY

- Activities of daily living (ADLs) are essential and routine tasks that most young, healthy individuals can perform without assistance.
- The inability to accomplish essential activities of daily living may lead to unsafe conditions and poor quality of life.

Basic ADLs	Instrumental ADLs
Bathing Dressing Toileting Transfers Continence Feeding BADL score __/6	Using the telephone Shopping Food preparation Housekeeping Laundry Driving Taking medications Managing money IADL score __/8

ANY
QUERIES

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**THANK
YOU**